

EDUCATION OF PETTY OFFICERS
IN THE UNITED STATES NAVY.

BY

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Personnel
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EDUCATION OF PETTY OFFICERS IN THE UNITED STATES NAVY

A THESIS PRESENTED FOR THE
DEGREE OF MASTER OF SCIENCE
IN PUBLIC ADMINISTRATION

BY

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EDUCATION OF PETTY OFFICERS IN THE UNITED STATES NAVY

CHAPTER I

STATEMENT OF THE PROBLEM

INTRODUCTION

The Bureau of Naval Personnel, in addition to other functions, is charged with and is responsible for "the procurement, education, training, and discipline, of officers and enlisted personnel of the Navy, including the Naval Reserve and the Reserve Officer's Training Corps, except the professional education of officers, nurses, and enlisted men of the Medical Department."¹

It is the writer's opinion that, in the years preceding the entry of the United States into World War II, the Bureau of Naval Personnel failed to meet one of its most important responsibilities. It failed to provide for a broad education of naval petty officers toward a more adequate preparation for the responsibilities which were thrust upon them by rapid promotions and other demands of the war. In this paper the writer expects to show that the training of enlisted men in their various specialities had been overemphasized at the expense of a general well balanced education; that lacking a sound educational background, many of the experienced and highly trained enlisted men could not adequately meet the high standards of performance, initiative, and leadership that

1. Capeton, A. L., The Naval Officer's Guide, McGraw-Hill Book Co., Inc. 1943, p.-45

was needed of them. It is also desirable to set forth the beginning of an acceptable solution to the problem of education of enlisted personnel for it is a problem still awaiting solution.

In order to keep this paper within reasonable limits the discussion will be confined to the line organization of the Navy and within the line organization, consideration of naval aviation personnel will also be excluded. By excluding the aviation and staff corps personnel much can be gained in the way of eliminating involved explanations, references, and the like.

SOURCES OF JUNIOR COMMISSIONED OFFICER PERSONNEL

During the years following the close of World War I and through 1939 the Regular Navy was the only permanent professional naval force. It consisted of officers and men who had elected to make a career of the naval service. The source of junior officers was the United States Naval Academy at Annapolis, Md., whose graduates were commissioned as ensign and ordered to active duty in the fleet. There was provision for this source to be augmented, when necessary, by the

appointment of a few ensigns from among the officers in the warrant and commissioned warrant grades of the Regular Navy. Such appointments were rare however, for the Naval Academy graduating classes were consistently large enough to supply the number of ensigns allowed by law.

"Appointment to the grade of ensign in the line of the Navy are made from those midshipmen who successfully complete the prescribed course at the Naval Academy. Whenever there are vacancies in the grade of ensign unfilled by graduates of the Naval Academy, not exceeding twelve appointments to that grade may be made in any one calendar year from among chief boatswains, chief gunners, chief machinists, chief electricians, chief carpenters, chief radio electricians, boatswains, gunners, machinists, electricians, carpenters, and radio electricians of the Navy."²

It was recognized that, in the event of war, the Naval Academy facilities could not be sufficiently expanded to keep pace with the increased need for officers. Nor was it considered practicable to rely solely upon the warrant grades to meet the additional requirements for officers that would result from an expansion in time of war. Therefore, in 1926 there were established Reserve Officer Training Corps Units at each of six universities³ in this country. These units were established for the purpose of providing a source of

² U.S. Navy Regulations-1920, U.S. Government Printing Office, 1942; Art. 1632(1)

³ There are at present (August 1947) fifty-two such units. See appendix II for complete list.

officers from among college graduates who during summer training cruises aboard naval vessels, had received fundamental training in naval gunnery, navigation, engineering, communications and seamanship. A Naval R.O.T.C. student who successfully completed his college course and a course in naval science and tactics could expect to be appointed an ensign in the Naval Reserve. Unfortunately the first of these reserve officers were graduated in 1930 amidst the economic depression which was making itself felt in the Navy as elsewhere. These graduates were commissioned but were not called to active duty for further training and indoctrination with the result that they gradually lost interest and drifted away from the Naval Reserve. Under these circumstances it was only natural that the R.O.T.C. units lost some of their appeal and by 1937 interest had waned to the point where some of the unit quotas were not filled.

By this time, however, Hitler had repudiated the Versailles Treaty and had marched into the Rhineland. War clouds over Europe were threatening the security of this nation as well as the rest of the world. University students renewed their interest in the R.O.T.C. program and it began to grow. In 1938 two units were added, another was organized in 1939, and during 1940 and 1941 eighteen additional units were formed in preparation for the tremendous naval expansion that was soon to come. The Navy Department had commenced

ordering R.O.T.C. graduates to active duty in the fleet in 1940.

A third source for the procurement of young commissioned officers was tapped on June 26, 1940 when the President of the United States announced a major program for the voluntary training of candidates for line commissions in the Naval Reserve. Eligible for this program were young men having a minimum of two years college education at accredited institutions. Candidates were enlisted as apprentice seamen in the Naval Reserve with the designation of "V-7."

The program called for sending these V-7 seamen to sea with the fleet for a thirty day period during which time they were to be given basic training and screened for further training. Those candidates who successfully passed this first hurdle were appointed as midshipmen in the Naval Reserve and sent to a Reserve Midshipman School⁴ for an intensive three month period of instruction and indoctrination. Upon graduation the midshipmen were commissioned as ensigns in the Naval Reserve and ordered to active duty in the fleet.⁵

Thus it was that by the summer of 1940 there existed three sources from which the Navy could draw its junior commissioned officers; the Naval Academy graduates, the Naval

⁴ Schools were established initially at Northwestern University, the Naval Academy, and in New York City. Later Columbia University took over the New York school and other schools were opened at Notre Dame and Cornell Universities.

⁵ Ageton, A.A., Op. Cit. Chapter III.

⁶ Footnotes 6-13 inclusive have been deleted from this copy.

R.O.T.C. graduates, and the Naval Reserve Midshipmen School graduates. The writer does not have available the relative proportion of officers procured from these sources, but that information is not necessary here. The thing that is of interest in this paper is the fact that all of these officers were either college graduates, or, had had a minimum of two years of college education.

Also, by the summer of 1940 the war in Europe had grown to full size. France had been overrun and England was being heavily bombed. In this country the Navy was launching upon an expansion program unparalleled in history and more officers were needed than could be obtained from the three sources named above.

There lay, in the senior enlisted ratings and in the warrant grades of the Regular Navy, a pool of potential officer material as yet untapped. It was to this source that the Navy turned to fill its ever increasing needs. On July 24, 1941, Congress enacted legislation authorizing the temporary appointment to junior commissioned ranks in the regular Navy, of commissioned warrants, warrants, chief petty officers and first-class petty officers.¹⁴ A week later the first group of officers was appointed from this new source.

14. General Code Annotated, Title 34, Section 50, Louis-
Merrill Co., 1943.

FROM ENLISTED MAN TO COMMISSIONED OFFICER

Considering now those chief and first-class petty officers who were thus promoted it is desirable to review first the procedure followed in their selection and the grades to which they were promoted. This paper will then look into the background of this class of officer, which will be designated as "ex-enlisted," and finally will consider the degree of success they enjoyed in meeting the problems of their new found authority and responsibilities.

Not every chief and first-class petty officer was selected for promotion. In the beginning the numbers were small and only the most outstanding individuals were selected. There were certain basic requirements of age, school grade completed, and physical condition that had to be met before a person was eligible for consideration. He could not be older than 37 for promotion to ensign and not less than 32 nor more than 50 for promotion to lieutenant (junior grade.) It was required that he be an eighth grade graduate and be able to pass a physical examination slightly more rigid than is required for enlistment. These basic requirements were liberal and did not exclude a large number of individuals.

The selection procedure called for individual commanding officers to make recommendations as to which chief and first-class petty officers in their commands were best qualified for promotion. They were not required to nominate anyone; merely authorized to do so. There was a realistic, if not scientific,

method of selection, for commanding officers were very cautious and deliberate in making their nominations. To them this was a duty to be taken most seriously and far from an opportunity to reward some loyal and deserving, but unqualified, leading petty-officer. This was war, or near-war, and not a time to allow the heart to rule the mind.

The Navy Department did not commission all of those thus nominated. Appointments were placed on a competitive basis and only those were promoted who had excellent performance and conduct records and whose years of experience, types of experience, and age were compatible with the Navy's needs. Of course as demands for more junior commissioned officers increased, the percentage of nominees selected was increased; but regardless of the need for officers, the numbers promoted never included border line cases. The best proof we have of the selective nature of the procedure for promoting petty officers to commissioned rank is in numbers. Throughout the entire war, only 14,796 were promoted from this source which as early as June, 1941 numbered 64,515; most of whom were eligible for consideration.¹⁵ One may think that promoting almost one in four of the eligible individuals is not highly selective; but one must consider that the 64,515 was composed of those in the upper 20% of the enlisted population.¹⁶ They

15 Information furnished by Procurement Division and Complements Section of the Bureau of Naval Personnel.

16 Ibid. Under pre-war allowances, 7% of enlisted strength were chief petty officers and 13% were petty officers first-class.

were the individuals who had successfully competed for the top petty officer ratings during time of peace and were by no means merely the "run of the mine" types of individuals.

Depending upon their service background, their age, the Navy's needs, and the commanding officers recommendation, the petty officers who were selected were promoted direct to lieutenant (junior grade,) to ensign, to commissioned warrant or warrant. If promoted first to warrant they advanced automatically to commissioned warrant after a period which ranged from 6 months in the early part of the war to 18 months toward the war's end. For advancement from commissioned warrant to ensign, or to lieutenant (junior grade,) these individuals had to go through the whole selective process again. Once appointed ensign or lieutenant (junior grade) the advancements to the next higher grades were made automatically after a period of 6 to 18 months service in grade.

However, whether he was appointed through the warrant grades first or directly to ensign or lieutenant (junior grade) is of little concern here. This paper's consideration of the ex-enlisted officer is centered in his performance of duty in the grades of ensign and above.

What was the early background of a typical ex-enlisted officer? He was of good American stock, of sound physique and in good health. He had been raised in a well respected family and was considered one of the better boys in his community. For lack of family funds or through failure of our public school system to develop his interest in education, he

had, upon graduation from high-school, or perhaps upon reaching the age where school attendance was no longer compulsory, elected to terminate his formal education. At some point between the eighth and twelfth grades he had left school¹⁷ and turned his energies, interests and abilities toward selling his services in the world of work. He was undecided as to the kind of work to enter, and probably did not have a very clear idea of the direction in which his life's goal lay. In this frame of mind the individual was vulnerable to such recruiting slogans as "Earn While You Learn" so he enlisted in the navy as an apprentice seaman.

From apprentice seaman the young recruit began his climb up the promotional ladder. He became seaman second-class in a matter of weeks and seaman first-class about one year later. Then followed the grades of third-class, second-class, and first-class petty officer. The minimum period of service required before being advanced to first-class is three years.

17 Following data concerning pre-enlistment education of recruits during 1925-1931 was compiled for the writer by Research Section, Bureau of Naval Personnel.

Previous Education of recruits	1925	1926	1927	1928	1929	1930	1931
who had not completed elementary school	26.1	29.3	26.2	16.9	14.1	12.0	5.5
who had completed elementary school only	30.8	28.4	31.0	29.5	29.6	27.3	20.1
who had completed one or more yrs of high school	41.1	42.3	42.9	53.6	56.3	60.7	74.4

and four months.¹⁸ The actual period of service, however, is governed to a large degree by the authorized enlisted strength of the Navy and funds appropriated annually for pay and subsistence of naval personnel. The period also varies within the several ratings according to service needs. For example, the need for personnel trained in radio was much greater in 1935-40 than it was for visual signal personnel and the speed of promotion in the radio ratings was correspondingly greater. The period of course, varies with individual capacities and abilities and, during time of peace, only an above average recruit reaches the first-class grade at all. Considering the conditions that obtained during 1925-40, including the depression years when promotion was at a virtual standstill, an above average seaman probably became a first-class petty officer five to eight years after enlisting. In another three years he became eligible for advancement to chief petty officer, the highest enlisted rating. In this discussion it is assumed that he achieved this highest rating four years later and had held it for one year at the time he was selected for temporary appointment to the grade of warrant or ensign.

The ex-enlisted officer then was a man of considerable naval experience having served on active duty for a period of ten to thirteen years. Most of his time had been spent in the fleet, attached to various types of ships. But he had had more than mere experience; he had had training as well. From his

18 Bureau of Naval Personnel Manual-Revised; U.S. Government Printing Office, 1942; Art. 5-5103.

first day in the Navy this officer had been subject to military discipline and seldom had a day passed in which he did not take part in a drill or training exercise of some kind. Prior to his promotion to third-class petty officer he had entered a particular field of specialization and had come to be considered as a trained technician. He had studied training courses and passed many progress tests and very probably had completed specialized training courses at two or more Navy Schools.¹⁹ His training over the years had made of him primarily a specialist, notwithstanding the announced policy "to make him first of all a man-of-war's-man, a leader, and second a specialist."²⁰ It is true that he had demonstrated some leadership qualities and had exercised leadership over small details of men in routine affairs but he was far more a technician than an executive.

In brief the ex-enlisted officer was a rather outstanding individual who had risen to the top of the enlisted ratings over a great deal of competition: a man of naval experience and technical knowledge; thoroughly trained. However, it is probable that he had not completed high school in so far as a formal education was concerned. He was a mature individual of 27 to 35 years of age and in the prime of life.²¹

19. See Chapter II, p. 43.

20. Bureau of Naval Personnel Manual-Revised 1942; Art. 1-2202.

21. The peak of physical growth occurs during the years 25 to 30 and the mass of intellectual output is between 25 and 40. From Life: A Psychological Survey, Fessenden, Janney, and Allen-Arper and Bros., 1939; pp-150, 177.

HOW DID EX-ENLISTED OFFICERS PACE UP TO GREATER RESPONSIBILITIES AND AUTHORITY?

Upon being promoted to officer rank these outstanding petty officers, of the kind under discussion, found themselves at first in advisory and supervisory positions of a technical nature in the field at which they were accomplished, the field of their own specialty. Here they succeeded quite well and as a result of this success soon found themselves being carried along by automatic temporary promotions to the next higher rank and beyond. The Navy's need for their services as specialists was still great but there arose another need, that for their general overall experience to leaven the inexperience of the ever increasing number of young college graduates being turned out by the Naval R.O.T.C. units, the Midshipmen Schools, and the Naval Academy as ensigns. In other words, the ex-enlisted officers in addition to carrying a large part of the technical work-load of an expanding Navy had also to perform the function of supplying the experience so sorely lacking in the majority of young officers.

As time passed, more ex-enlisted men arose to the rank of officer and those who had been promoted earlier were gradually relieved of their technical responsibilities by the newcomers. They came to find themselves no longer considered as specialist officers but rather in the role of general line officers. They became department heads and executives of the larger auxiliary and smaller combatant ships, commanding officers of tugs and landing craft, division officers and assistant ce-

partment heads of larger combatant ships, and in charge of activities at advanced bases. In short, they came to occupy important, if not key, positions throughout the Navy's war time organization.

It was at this point that the ex-enlisted officers began to face a real test of their capacity and ability to function as line officers. How well did they meet this test? This is a controversial question but, in general the answer must be that they performed satisfactorily. There were some failures of course, as well as outstanding successes, but in any review, such as this, one must guard against placing emphasis on these exceptional cases. One must put the exceptions out of mind and think only of that large group whose performance of duty was satisfactory.

Satisfactory performance means that their performance was acceptable without necessarily implying a high degree of satisfaction. It is the writer's opinion that the great majority of ex-enlisted officers were inadequate in several respects in the performance of their duties as line officers. None of us are perfect and there were large numbers of junior officers from other sources, including the Naval Academy, whose performance of duty was only satisfactory. It is the writer's thesis, however, that the shortcomings of officers with a college background had their roots, for the most part, in youth and inexperience, while the weaknesses observed in the experienced and more mature ex-enlisted officer arose from their poor educational background and need not have existed. In

other words it is the writer's opinion that the "fairly good" class of officer which came up through the ranks could have been an excellent class of officer had the Bureau of Naval Personnel placed more emphasis on raising the educational level of the petty officers during the years of peace preceding World War II.

The opinion herein expressed of the general inadequacy of the ex-enlisted officer is based upon a review of approximately 250 Officer's Fitness Reports covering this class of officer and some 2000 Officer's Fitness Reports on warrant and commissioned warrant officers prior to their promotion to ensign.²³

Paragraph 8 of the Fitness Report is as follows:

"8. Indicate your attitude toward having this officer under your command, would you:

Definitely not want him?
Prefer not to have him?
Be satisfied to have him?
Be pleased to have him?
Particularly desire him?"

The answers which commanding officers gave to the above when reporting upon ex-enlisted officers was too frequently "Be satisfied to have him" and too seldom "Particularly desire him."

There are available some data which may be interpreted as an indication that many of our ex-enlisted officers never fully

23 In his official capacity as Officer-in-Charge, Warrant Officer Distribution Section, Bureau of Naval Personnel, Washington, Sept. 1944 through Aug. 1946, the writer had occasion to review many representative reports.

accepted the idea that they could perform the duties of their higher rank in a highly satisfactory manner. Of the 14,796 ex-enlisted officers only 10,747 of them were still holding their ranks on 31 May 1947.²⁴ In other words 4,049 of these individuals had either been released from active duty or had reverted to their permanent enlisted status. The Navy still needs to retain as many as possible of these ex-enlisted officers in their higher ranks during the period of transition from War to Peace and has encouraged them to retain their temporary commissions. It has however, authorized their reversion or transfer to inactive status at their own request. The 4,049 who are no longer serving as officers are individuals who, for one reason or another, preferred to vacate their commissions or who were reverted at the instance of the Navy Department. It is submitted that whatever the cause of these premature reversions, all, except a few which resulted from individuals reaching retirement age, can be laid to a feeling of dissatisfaction. A dissatisfaction, either official or individual, with the individual's performance of duty in a commissioned status.

²⁴ Bureau of Naval Personnel Progress Report, Maypers 15,355, May 1947; p-1

REPORT TO THE BOARD OF DIRECTORS
ON THE PROGRESS OF THE WORK DURING THE YEAR

THE NATURE OF THE INADEQUACIES

The strength of the ex-enlisted officers lay in their technical skills and knowledge; in their years of naval experience; and in their maturity. However, this strength in itself was not sufficient to enable them to meet, in a highly satisfactory manner, the ever increasing demands for leadership, personnel administration, planning, organizing, instruction and the like. These demands, while perhaps not beyond their potential capacities and abilities, were on a scale never before encountered and came too swiftly to permit satisfactory adjustment. The individual's environment had expanded rapidly, and had become more complex. His adjustive capacities had been expanded to the limit and our former excellent petty officer now found himself at a level of responsibility and authority quite unfamiliar to him,--a level at which he functioned less effectively and with less success than was his custom. He felt inadequate to his new tasks.

Whether his inadequacy was real or only imagined is of little consequence. If the feeling existed within him it was real enough to make his adjustment more difficult. Adjustment to new situations is a natural life process and most of us are able to make minor adjustments readily. We make more radical adjustments dependent upon the extent to which our capacities have been developed by life's experiences, by training, and by education. This is an important part of adjustment for it governs the development of one's capacity, but in the case

THE NATURE OF THE INADEQUACIES

The strength of the ex-enlisted officers lay in their technical skills and knowledge; in their years of naval experience; and in their maturity. However, this strength in itself was not sufficient to enable them to meet, in a highly satisfactory manner, the ever increasing demands for leadership, personnel administration, planning, organizing, instruction and the like. These demands, while perhaps not beyond their potential capacities and abilities, were on a scale never before encountered and came too swiftly to permit satisfactory adjustment. The individual's environment had expanded rapidly and had become more complex. His adjustive capacities had been expanded to the limit and our former excellent petty officer now found himself at a level of responsibility and authority quite unfamiliar to him,--a level at which he functioned less effectively and with less success than was his custom. He felt inadequate to his new tasks. Whether his inadequacy was real or only imagined is of little consequence. If the feeling existed within him it was real enough to make his adjustment more difficult. Adjustment to new situations is a natural life process and most of us are able to make minor adjustments readily. We make more radical adjustments depending upon the extent to which our capacities have been developed by life's experiences, by training, and by education. Life plays an important part in adjustment for it permits the development of one's capacity, but in the case

of our ex-enlisted officer there was no time in which to adjust.

From this lack of adjustment there stemmed a feeling of insecurity and a lack of the self confidence so necessary to the success of an officer. Wherever he was assigned to duty he found himself serving with college graduate officers who, though of equal or junior rank, frequently exhibited marked abilities in those very categories, leadership, planning, organizing, instruction, and administration, in which the ex-enlisted officer was, or felt himself lacking. Thus it was that the ex-enlisted officer found it difficult to maintain that feeling of security that is recognized as one of the fundamental human traits essential for good morale and effective living. In some cases this situation actually resulted in a definite feeling of inferiority.

Another element that one's success in life rests upon is earned recognition. I believe that here too the ex-enlisted officer's success was undermined. At the beginning of the war large numbers of inexperienced young college graduate officers found support and comfort in their associations with the experienced ex-enlisted officers. They leaned heavily on their experience and recognized them as guides and counselors. There was earned recognition at its best. However, as time passed the one time inexperienced officer came to feel that months of duty at sea and combat with the enemy had made of him an "old-timer" and he no longer looked upon the experienced ex-enlisted officer as his superior. If he gave consideration to comparative qualities at all, it was to consider that he, with

his college education plus experience, was superior to the other group who could boast of little educational achievement. What at first was earned recognition in large measure became nothing. This condition was bound to contribute to a lowering of the effectiveness of the ex-enlisted officer.

A sense of belongingness is important to a man in his work and this sense had also been largely destroyed. The ex-enlisted officer had moved out of the familiar environment of the enlisted man and stepped into the more complex one of the officer. He was thrown into a closer association with men whose educational level was several grades above his own. There were differences in attitudes, habit patterns, interests, and philosophies between these distinctly different types of officers. The educational background of ^{the} one and the experience background of the other provided too little in common and the ex-enlisted officer did not feel that he belonged. As a result there was not the whole hearted cooperation that would have added to the success of each type of officer in his performance of duty.

The writer does not wish to place the ex-enlisted officer in the category of an uneducated person. He was far from that, but he was, comparatively speaking, inept in the skills of oral and written expression and this too made of him a less effective general line officer.

In the above paragraphs an attempt has been made to point out something of the general nature of the ex-enlisted officer's inadequacies in the performance of the duties of a line of-

ficer.²⁵ It has been inferred, and will be repeated here, that in the writer's opinion the inadequacies that were shown by these officers were all of a nature and degree that could have been eliminated by a broader background and a higher level of liberal education; an education well within the native capacities of the individuals concerned.

²⁵ The writer considers that much light could be thrown on the specific nature of the inadequacies by an item analysis of the Fitness Reports submitted on the 14,796 ex-enlisted Regular Navy Officers. This project is recommended to the Research Activity, Bureau of Naval Personnel, Washington.

PETTY OFFICERS WHO WERE NOT APPOINTED TO COMMISSIONED RANK

Thus far this discussion has concerned the ex-enlisted officer. An attempt has been made to use him and his inadequacies to support the argument that the Bureau had failed in the education of the Navy's petty officers toward a more adequate preparation for commissioned rank. An equally strong argument can be found in those leading petty officers who were not appointed to commissioned ranks at all.

Using the June 1941 figure of 64,515 chief and first-class petty officers and subtracting the 14,795 who became ensigns or above there remains 49,719 who for one reason or another were not appointed. Of these individuals not more than 15,000 were promoted to the warrant grades.²⁶ Thus some 34,000 individuals, who were leading petty officers in June 1941, failed to measure up to the level of authority and responsibility demanded of warrant and commissioned grades during the war. This is a minimum figure and does not take into consideration the thousands of second and third-class petty officers who were promoted to swell the pool of chief and first-class petty officer to a total considerably greater than the 64,515²⁷ used for purpose of illustration.

²⁶ The warrant grades expanded by about 20,000 officers during the war but some 5,000 of this number were procured from the retired enlisted and civilian sources.

²⁷ This figure is more than doubled during the next year.

Listed here are a number of reasons that operated to prevent the higher advancement of the 34,000:

1. Too old to qualify.
2. Not physically qualified.
3. Poor conduct as petty officers.
4. Poor performance as petty officers.
5. Had reached the limit of capacities in the petty officer rate; lack of development.
6. Though nominated and tendered appointments, some refused to accept appointment because:
 - (a) They shunned higher responsibilities.
 - (b) They were occupying desirable billets and had no desire to take a chance on the transfer that would immediately follow appointment.
7. Had not completed the eighth grade in school.

In the above, lack of opportunity for promotion has not been included for the Navy needed the services of each and every one of these petty officers in an officer billet. In an expansion as great as the Navy's it is only logical that the absolute maximum number of persons be promoted from a trained and experienced source.

Selecting the first two items in the above list, which probably accounted for only a small percentage of the whole, and considering only the last ~~four~~^{five} items, what is the conclusion? The conclusion must be that somewhere in the careers of these petty officers we have failed in its educational program. It failed to develop their capacities, abilities, and interests; it failed to raise the general educational level

and to educate them toward a truer understanding of the values of life.

EDUCATION DEFINED

Before proceeding to a discussion of the educational and training facilities provided in the Navy for the advancement of the enlisted personnel it is desirable to define some terms. What is meant by education and what are its goals? What is training?

This can best be done by quoting from the literature on the subject.

James Truslow Adams uses the term education to mean: "Anything which can be taught to an individual to help him to develop his various abilities to the full. Education should enable him to lead a more satisfying life, should assist the growth of his personality, prepare him for intelligent citizenship and make him feel that he is a person and not a slave, not a mere cog in the vast machine of modern life."²⁸

"In no single place did Thomas Jefferson summarize his philosophy of education, but the following passages from his writing indicate the nature of his thought respecting the ends to be attained:

1. To give to every citizen the information he needs for the transaction of his own business;
2. To enable him to calculate for himself and to express and preserve his ideas, his contracts, and accounts in writing;

²⁸ Adams, James T., Frontiers of American Culture, Charles Scribner's Sons, 1947; p-7

3. To improve, by reading, his morals and faculties;
4. To understand his duties to his neighbors and country, and to discharge with competence the functions confided to him by either;
5. To know his rights; to exercise with order and justice those he retains; to choose with discretion the fiduciary of those he delegates; and to notice their conduct with diligence, with candor and with judgement;
6. And, in general, to observe with intelligence and faithfullness all the social relations under which he shall be placed."²⁹

"Education consists in teaching people to value the things that bring the richest and most permanent satisfactions."³⁰

"What a man believes is the most important thing about him. It is the innermost man himself and determines his sense of obligation, his manner and degree of cooperation with his fellows, how he feels about life's problems, how he votes, etc."³¹

From the above one begins to comprehend the all inclusive-ness of the term education and to realize that it is not fully embraced in school or college, nor in life's experience, nor in one's associations with his fellow-man, nor in one's work or training for work. It is the integration of all of these

29 Beard, Charles A. The Unique Function of Education In Democracy, Educational Policies Commission, National Education Association of the United States and the Department of Superintendence, Washington D.C. 1937 p. 22

30 Wigram, A.D., The Marks Of An Educated Man, Hobbs-Merrill Co. 1925; p.30

31 Ibid, p. 35

and more too. It is greater than the sum of its parts and does not lend itself to the limits of ready definition.

Webster comes close to the mark, however, with this simple statement, "to prepare us for complete living is the function which education has to discharge."³²

Our concept of training is easier to state, "training suggests exercise or practice to gain skill, endurance, or facility."³³ A man may be trained in the facility of public speaking, or in the skill of operating a drill press, or to have the endurance of a marathon runner, but he is not apt to be trained in all of these. Training does have breadth. On the whole it may include a great part of what one considers to be education. In the life span of any individual, however, training can comprise only a small part of his education, unless of course, his education is a limited one. Unfortunately this is sometimes the case. Education is a social science that facilitates the growth of all phases of an individual's life. It includes training of physical, social, and academic intelligence as well as mechanical intelligence; a broad field, both in quality and quantity; concerned with fundamentals, comprehensively conceived.³⁴

³² Webster's New International Dictionary.

³³ Ibid

³⁴ Stone, W.S., Lectures On Organismic Concepts, Education 770
The Ohio State University, Oct. 1946.

CHAPTER II

EDUCATIONAL AND TRAINING FACILITIES FOR NAVAL ENLISTED PERSONNEL

Chapter I dealt with the failure of the Navy's pre-war educational and training program adequately to prepare petty officers for the role they were called upon to play as commissioned line officers during World War II. It is desirable now to examine the post-war situation to determine whether or not today's educational plans and procedures are sufficient to guarantee the development of today's recruit into tomorrow's petty officer so that he may be qualified to meet the demands that some future war, or other unforeseen circumstance, may impose upon him as a commissioned officer.

It is the opinion of the writer that the Navy is still following its former practice of placing too little emphasis on general education. He fears that the tremendous advances and changes which have been made in the various technical fields during the war, and since, are apt to result in the acceleration of the unbalance of the technical as contrasted with the educational program, a program wholly unsuited to the development of an educational background which will enable our future ex-enlisted officer to perform all of his duties with a feeling of confidence and pride. If enlisted personnel are to be drawn upon to augment the commissioned officer ranks in the future, the Bureau of Naval Personnel must look to the broadening of their education as well as to specialization of their training.

TODAY'S RECRUIT

What formal schooling has today's recruit acquired prior to his enlistment? To find the answer to this question a survey was made of the educational background of 1,781 young men recruited from sections of Ohio and Kentucky during the twelve month period ending 1 June, 1947.¹

As far as "school grade completed" is concerned it is safe to assume that these 1,781 cases are representative of the men being recruited from the nation at large. The median school grade completed by the male population for the United States as a whole was reported by the Bureau of the Census,² as being 8.4 in 1940; that for Ohio was 8.6 and for Kentucky 7.7. The average for Kentucky and Ohio is 8.15, which is sufficiently close to the national median to make this an acceptable sample study.

The study shows that 28.6 percent of naval recruits have completed the twelfth grade or better but that 26.2 percent had not completed the first year of high school. A large percentage of them had left school at some point during their high school education. The median school grade completed by naval recruits is 10.5, or slightly more than two years further along than the national median. This is an encouraging finding and speaks well for the Navy's recruiting standards. The recruit

1 See Appendix III.

2. Bureau of the Census Release, Series P-10, No. 8, dated April 26, 1942. Educational attainment of the population, 25 years old and over, in the United States-1940.

is pretty well along with his schooling before he comes to the Navy. But, is his schooling adequate to place him on an equal footing with the college graduate officer with whom he may subsequently serve as a colleague? In the writer's opinion the answer is no. The educational backgrounds of these two distinctly different types of officers are too unlike for them to perform their duties with equal success. The educational level of the recruit must in some manner be advanced during those years in which he is moving up the promotional ladder. Bode says that, "Educated persons live in a world that is inaccessible to the uneducated except through education."³

3 Bode, P.H., Modern Educational Theories, Macmillan, 1927; p. 209

TRAINING FOR PROMOTION

It is desirable to follow the course of one of the recruits up the promotional ladder to see what educational facilities the Navy has to offer him. For convenience he will be named Clark.

Upon enlisting, Clark is first sent to a Naval Training Center for a twelve weeks period. Here he is introduced to military discipline, naval duties, and esprit de corps. The course includes instruction in boats, swimming, infantry drill, small arms, care of his outfit and of himself on board ship. From the training center Clark is transferred to a ship for duty. Here begins the grind of learning those general naval subjects with which all naval men are required to be conversant.

1. Uniform regulations and care of clothing.
2. Discipline and offenses.
3. Salutes and colors.
4. Manual of arms.
5. Drill.
6. Handling of boats and oars.
7. Knots and splices.
8. The compass and relative bearings.
9. Visual signaling.
10. Swimming and life saving.
11. General naval and shipboard organization.
12. A vocabulary of awards.
13. Enlistments, discharges, and pay accounts.

14. Types, general characteristics, and nomenclature of naval vessels and aircraft.
15. Daily routine in port and at sea.
16. General drills aboard ship.
17. Hygiene and first aid.
18. Gas protective apparatus.
19. Rust removal and painting.
20. General safety precautions."⁴

Clark learns these things by doing, by observing, through explanation and instruction, and by studying and completing progress tests in the General Training Course for non-rated men. Clark entered the Navy as an apprentice seaman and was advanced to seaman second-class about four weeks after joining his ship. So, in addition to acquiring general naval information, he now begins to learn more specific skills and knowledge in preparation for promotion to seaman first-class which will come in eight to ten months. To be eligible for this promotion, Clark must be able to: (1) demonstrate his skill at marlinspike and deck seamanship; (2) show ability to perform the duties of his own battle station; (3) demonstrate competence in standing watch; (4) demonstrate a knowledge of common sea terms and expressions; and (5) pass a written examination on the subjects of boats, ground tackle, gunnery and seamanship.⁵

⁴ Bureau of Naval Personnel Manual-Revised, U.S. Government Printing Office: 1942, Art. P-5203, Fundamental Knowledge Required Of All Men In The Navy.

⁵ Ibid., Art. P-5205.01 (2)

From the above it is evident that Clark has been given considerable schooling, for there has been little waste of time in the daily routine of drills, exercises, study periods, instruction periods, and ship's work. However, nearly all of his training thus far is purely vocational.

As seaman first-class Clark is looking ahead to further promotion and this requires that he become more expert in the use of the skills and knowledge which he already has acquired. In addition, there are certain general qualifications required of all petty officers as well as technical knowledge and skills in one particular speciality. For convenience it is assumed that Clark decides to enter the gunner's mate rating.

The general qualifications required of all petty officers are:

1. Demonstrate the qualities of a good leader when in charge of a group of men.
2. Demonstrate ability to train subordinates.
3. Show ability to exert authority and maintain discipline under all conditions. Know the duties and responsibilities of a police petty officer.
4. Know regulations regarding the security of classified matter.
5. Demonstrate ability to take charge of a group, and conduct infantry drill and physical exercise.
6. Demonstrate knowledge of watertight integrity, material conditions of readiness, and the uses of all fire-fighting equipment and rescue breathing apparatus.
7. Show ability to administer first aid including artificial respiration.

8. Show a fundamental knowledge of elementary arithmetic including addition, subtraction, multiplication, division, simple and decimal fractions and measurement.
9. Demonstrate ability to man a telephone station, handle equipment correctly, and follow standard talking procedure.
10. Demonstrate an elementary knowledge of chemical warfare and defensive measures.
11. Know painting regulations, paints, and painting equipment.
12. Demonstrate knowledge of the proper method of abandoning ship, swimming in oil covered water, and the use of life raft supplies and equipment.
13. Know signal flags and be able to send and receive semaphore and flashing light code.
14. Demonstrate knowledge of the duties of a lookout and be proficient in the recognition of friendly ships and aircraft.
15. Show ability in the use of rifles, pistols, automatic rifles, and machine guns and know safety precautions concerning these weapons.⁶

The technical qualifications which Clark must master before advancing to third-class gunner's mate are classified as practical factors and examination subjects. These are:

"A.--Practical Factors.

1. Demonstrate ability to use properly all hand tools and precision measuring instruments used in the maintenance of the gun battery to which attached.
2. Show ability to disassemble and assemble the breech and firing mechanisms of the gun on which stationed and ability to carry out routine maintenance procedure on battery to which attached.
3. Demonstrate ability to disassemble and assemble the machine gun on which stationed, and a rifle, a pistol, and a light machine gun.

4. Demonstrate ability to qualify as a gun captain, second class, at a main, secondary or anti-aircraft battery gun of a calibre of 1-inch or greater.
5. Show ability to station magazine and ammunition handling room crews on battery to which attached, to maintain flow of ammunition.
6. Know the operation of ammunition hoists.
7. Know how properly to lubricate guns or other equipment to which assigned.
8. Demonstrate ability to read simple blueprints and diagrams relating to battery to which attached.

B. Examination Subjects.

1. Guns.-Working knowledge of the steps taken in preparing a gun for firing. Knowledge of routine maintenance of the gun or equipment on which stationed, including lubrication and use of preservative coatings. Knowledge of after-firing upkeep routine and maintenance of battery log. General knowledge of the firing and illumination circuits on own battery. Thorough knowledge of the machine guns aboard own ship.
2. Boresighting.- General object of boresighting and precautions to be observed in the handling of telescopes and sights.
3. Electricity.- Knowledge of elementary electricity, including basic units of current and their simple manipulation by means of Ohm's law. Care of electrical equipment used in connection with battery on which stationed.
4. Safety Precautions.- Thorough knowledge of the safety precautions and casualty procedures in the battery on which stationed.
5. Ammunition.- Marking and stowage of ammunition for own battery. Marking and stowage of pyrotechnics. Flooding, lighting, and ventilation of magazine on battery to which attached. Visual examination of smokeless powder samples.
6. Pyrotechnics.- Elementary pyrotechnics, including basic units of oil pressure, the operation of constant delivery pumps and variable speed gears.

"All practical factors for the next higher rating must be completed and the completion noted in his service record before a man may be considered eligible to take examination for promotion. The practical factors are non-competitive and no mark is assigned on the assumption that a candidate either can or cannot perform the required tasks. The importance of the practical factors cannot be too strongly emphasized, providing as they do, an opportunity for a man actually to prove his ability in the practical aspects of his rating, and, in many instances, having the additional benefit of permitting him to demonstrate his ability as a leader. The completion of the practical factors should not be hurried."⁸

To assist him in preparing for his examination subjects and to pass his practical factors tests the Navy has provided Clark with study or training courses. These courses will be described later.

Upon the completion of approximately two years service, Clark has become a third-class gunner's mate. He has gained a considerable amount of information and knowledge but it must be observed again that the educational emphasis has been placed on "practical factors" and the majority of Clark's studies have centered on subjects related to his speciality. True, he has learned something of leadership, the maintenance of discipline, and how to instruct others. These abilities are founded in a general education that has been acquired along with his more specialized knowledge, but they are at a level of development

much lower than Clark may later be called upon to demonstrate as a commissioned officer.

Twelve months later Clark is eligible for promotion to gunner's mate second-class and after advancing to that grade he becomes eligible in another year for promotion to gunner's mate first-class. Actually the time spent in each of the third and second-class grades may well be two years for even the most capable and progressive individual is frequently hedged in by restrictions arising from inadequate appropriations and a shrinking Navy. What are Clark's educational opportunities during the four years prior to becoming a first-class petty officer? The answer is more of the same; practical factors and examinations in subjects related to his speciality, at a progressively higher level of skill and knowledge than he was required to demonstrate earlier. New factors and subjects have also been added. Practical factors now include demonstrated ability in hydraulics, sprinkling system, armorer, gun battery, ammunition and fire control. New examination subjects include fire control, metals, equipage, ordnance, and safety precautions concerning the handling of explosives.⁹

With approximately 6 years of naval training and experience behind Clark, the reader may feel that now the opportunity is surely at hand to deviate from purely vocational training and to provide more in the nature of liberal education. But no, Clark is still on the straight and narrow vocational

⁹ Ibid., 1-5205.03(2) and (3)

path leading to further promotion; chief gunner's mate (acting.) The time required to make this advance is 3 years and one additional year of seasoning is required before he can become a chief gunner's mate (permanent.) Again the requirements are found to center on subject examinations and practical factors. The level of knowledge and skills is quite advanced by now and has been broadened to include supervision and training of gun crews and repair parties; sources of information regarding ordnance equipment, guns, and magazines; reports and forms; electric-hydraulic units; and demolition.¹⁰

The gunner's mate rating has been used in this discussion as a typical one. In all there will be 73 general service ratings in the post war naval organization.¹¹ Some ratings, such as boatswain's mate, are less technical than gunner's mate but the majority, such as electronic technician's mate, or fire controlman, are equally specialized, or more so. The manner of training for various promotions is similar in all ratings except that in some, such as fire controlman, there are additional requirements which specify graduation from a Navy school.

¹⁰ Ibid., Art. 1-5205(4)

¹¹ Bureau of Naval Personnel Circular Letter No. 25-47 of 28 January 1947.

TRAINING COURSES

The writer has tried to point out that, during the first ten years of service the naval enlisted man has been given a narrow, highly specialized education designed to equip him with the particular skills and knowledge necessary for success in the performance of his specialized duties. Mention has been made of training courses. What are they like?

The training course is sometimes expository, sometimes narrative, sometimes conversational. Numbered lists are rare, because mere lists labeled 1,2,3, or a,b,c, result in a man's learning just that--lists! True understanding comes only after thorough study. In the training courses, real-life examples abound, descriptive passages are written so as to command attention, and analogies are drawn from the students' sphere of experience. The value of humor to provide an occasional "breather" is not overlooked. And above all else, language is used that is simple, vigorous, straight-from-the-shoulder.

There are plenty of half-tones, line drawings, and schematic diagrams in a training course. And always the text is keyed closely to every important detail of an illustration.

To provide for all of the steps in an enlisted man's career, there are three kinds of training courses:

1. General Courses for non-rated men start the blue-inked off on the right foot, giving information that is indispensable for every new man. General courses for petty officers require some advanced knowledge of a wide practical knowledge of the responsibilities that come with

leadership.

B. Basic Courses in such topics as electricity, mathematics, and use of tools provide fundamental training that is useful to many rates. These courses are easily adaptable, and men--no matter what their rate--will find them of great practical value.

C. Rating Courses cover the subject matter of the rate and classes indicated by their titles. In some instances, classes are combined owing to the overlap of duties, skills, and knowledge. This is true in the quartermaster rate, which has a training course entitled "Quartermaster Third Class-Second Class." In most rates, there is a single course book for the ratings of first-class and chief petty officer.¹²

The training courses are pocket-size, self-study manuals prepared by the Bureau of Naval Personnel. They are issued to any ship or station upon request and are available to all enlisted men free of charge. Men qualifying for advancement in rating can be sure that they have the necessary material at their fingertips. The content covers questions they may be expected to answer in the advancement examinations. Study is carried on under the supervision of officers in each command.

The following give us a clearer idea of these self-study manuals:

¹² Bureau of Personnel Training Bulletin, No. Navpers 14944
13 July 1943, p.10

¹³ IBI, p. 11, and Bureau of Personnel Manual-Revised, 1942
Vol. 2-5502

"Basic Machines manual begins with the simplest machines--levers--and proceeds with a discussion of the block and tackle, the wheel and the axle, the inclined plane, the screw, and gears. It explains the principles of work and power, and makes clear the differentiation between force and pressure. The fundamentals of hydrostatic and hydraulic mechanisms are discussed and several examples of mechanical combinations which make up complete machines are included.

"The Torpedoman's Mate (Electrical) course limits itself mainly to the technical aspects of submarine torpedo warfare."¹⁴

¹⁴ Crossed by Naval Technical Training Division, 15 January 1940, p. 15.

NAVAL TRAINING SCHOOLS

Thus far in the consideration of his education and training Clark has been followed up the promotional ladder to the grade of chief petty officer (acting.) He is approximately nine years along in his naval career. It has been seen that his educational advantages have consisted primarily of training courses and practical shipboard experience. But there have been other advantages and what is perhaps the foremost of these, the Naval Training Schools, will now be considered.

Training Schools are designed to assist the forces afloat by giving instruction and training which, because of the time allowed and facilities available, can be more advantageously given ashore. There are four classes of schools:

Class "P". Designed to conduct training in a preparatory or basic training level. This class is divided into two types: (1) Preparatory Schools for Class "A" Schools; and (2) Short Course Operators Schools which qualify men in elementary skills but do not cover all technical requirements for a third class petty officer rating. The source of students for these schools are newly recruited men finishing their twelve weeks period at a Naval Training Station. The length of course varies from three to eight weeks.

Class "A". Designed to cover the ground work for general service ratings as third class petty officers. The curriculum includes all technical qualifications required for the rating. The length of course will vary from 17 to 22 weeks except in

cases where the input is received from Class "P" Schools, in which case the length of the course may be less than 12 weeks.

Class "B". Designed to prepare men for higher petty officer ratings. The curriculum includes all technical qualifications required for a first-class petty officer with the exception of those included in the curriculum of a Class "A" School. Only rated men are assigned for training in Class "B" Schools, the curriculum being divided into two phases, one covering second-class petty officer qualifications and the other covering first-class petty officer qualifications. It is not necessary for all trainees to cover the entire curriculum if able to pass an entrance examination covering the first phase. The length of the course is not less than 8 weeks.

Class "C". Designed to train men in a particular qualification or skill which does not cover the full requirements for a general service rate, or in qualifications required for advancement to a chief petty officer. The curriculum for these schools is designed around the special skill or qualification which is desired. Class "C" schools are divided into "C-1" which includes those schools in Naval Establishments, and class "C-2" which includes all Bureau recognized special schools operated in manufacturing plants or factories.¹⁵

The great emphasis is placed on the maintenance under the supervision of these schools by the assignment of quotas to the class commands; assignment of quotas of newly enlisted men

to be sent upon completion of training at training stations; and assignment by name upon individual requests. Also, commanders of units of the fleet and commanding officers of vessels operating independently may utilize such training schools as are made available in the Bureau's semi-annual letter without reference to the Bureau after arrangements have been made with the officer in charge of such schools, and it has been determined that additional men can be accommodated.¹⁶

The enrollment at these schools varies of course, with the Navy's needs and with the funds made available for training. Table II, which shows the planned output of the schools during the months of May, June, and July 1947, indicates that the enrollment is approximately 2,000 men per month, or about 50% of the total number of monthly enlistments.¹⁷ It is obvious from this that by no means does every enlisted man have an opportunity to further his education at a shore-based school. Only the best qualified are enrolled.

16 ibid, art. E-5402

17 The Naval Recruiter, Vol. 2 No. 5, 15 May, 1947, shows recruitment totals for Feb., March and April 1947 to be 3000, 1800 and 4000 respectively.

PLANNED OUTPUT OF ENLISTED SCHOOLS

TABLE II

School	May	June	July
CLASS P			
Clerical.....	0	0	0
Basic Engineering.....	67	90	90
Class A			
Cooks & Bakers.....	80	80	90
Cooks & Stewards.....	18	15	15
Radiomen.....	167	200	200
Yeoman.....	100	160	160
Electrician's Mates.....	250	200	200
Fire Control.....	77	75	75
Motor Machinist's Mate.....	160	160	160
Storekeepers.....	150	150	150
Machinist's Mate(Shop).....	55	75	75
Metalsmith.....	25	30	30
Optical Primary.....	0	7	0
Radarman, Atlantic Fleet(only).....	125	90	90
CLASS B			
Torpedomen's Mates.....	20	12	12
Water Tenders.....	50	50	50
Stenography.....	5	10	10
Electronics Materiel.....	220	200	200
Fire Control.....	24	20	15
Elec. Int. Comm.....	50	32	25
Gunner's Mates.....	35	40	40
Optical--Advanced.....	0	10	0
CLASS C			
Crypto. Repair Facility.....	5	5	10
Gyro Compass.....	20	10	10
Motion Picture Operators.....	40	40	40
Teletype Operators.....	50	50	50
Refrigeration.....	90	80	90
Printers (Photolithographers).....	10	10	12
Recruit Procurement.....	100	100	100
Welding.....	8	15	15
Optical Special.....	5	5	5
Music.....	25	25	25
Deep Sea Divers.....	18	0	20
Comp. Cases.....	0	11	0
TOTAL	1,597	2,057	2,054

"The quality of students undergoing training at the Navy's shore-based schools during recent months indicates that in some cases not enough consideration is being given to meeting the standards set forth by the Bureau of Naval Personnel to govern the selection of these men. Selection for attendance at these schools should be based on the man's interest, mentality, background. These factors determine his capacity to derive the maximum benefit from the additional training afforded by shore-based schools. Presence of men who are unqualified for advanced training makes administration of the course of study complicated and far less effective than it should normally be. Obviously when such men are returned to the Fleet, you, as their Commanding Officers, feel--and with good reason--that little or nothing has been accomplished by their attendance at the school. On the surface this may appear to be solely the fault of the training received; actually much of the difficulty can be traced to improper selection.

It is fully realized that there is a shortage of third class and second class petty officers, and an excess of non-rated men. The practice of holding the best rated men and allowing the others to attend the shore-based schools is understandable, but not wholly justifiable. It is unfair to deprive a man of the benefits of advanced training simply because it is inconvenient to let him go at that time. The non-rated men should be constantly in training to assume the duties of those immediately above them. There is a valuable morale factor involved that cannot be ignored. It is human nature to want to better oneself. The man who has mastered the duties of his billet is a logical candidate for advancement, and hence for further training. A course taken at a shore-based school may mean the difference between a man's becoming a mediocre workman and a skilled technician.

The policy of returning men to their ship on completion of their training is being followed meticulously and every effort is being made to return all men who satisfactorily complete their training and are physically fit to continue their tour of duty. The Bureau of Naval Personnel has accelerated the training program in many instances so that the men can be returned as quickly as practicable to their ships."18

18 Sprague, L.L., Rear Admiral, USN, Chief of Naval Personnel
 A Message to All Commanding Officers, U.S. Naval Training
 Bulletin, Navpers 14950 of April 1947, p. 2

The writer does not contend that the school enrollment should be 100% nor does he believe that even the most ardent educationist would condemn the Navy in its practice of limiting the school enrollment. Thorndike's thought on the subject of equalization in education is that the time and funds available should be expended on those best qualified to profit therefrom. "At its best, the practice of equalization is thoroughly unsound, unjust, and cruel. At its worst, when it uses education to compensate for deficiencies in native ability and past effort, it is ridiculous perversity."¹⁹

The criticism that the writer has concerning the Navy Schools is the strong emphasis being placed on the technical aspects of education to the almost total exclusion of general education. This weakness has been recognized.

"Personnel reporting for duty on board ships must in almost every case receive additional training before they can be considered fully qualified for duty. Graduates of the Class "B" and "C" schools who have been taught the techniques of proper instruction as well as the technical knowledge of their rate will become key men in the ship's training program. With this in mind the "B" and "C" schools are being asked to provide every man with basic teaching skills so that he can more effectively pass his knowledge and skill on to those junior to him. The skeleton outline on which each school will develop its course includes; instructional analysis, lesson planning, scheduling, on-the-job training methods, testing, and progress charts and records."²⁰

This merely recognizes the need for a broader education of our petty officers. It recognizes that these men must be both men as well as technical men. It recognizes a

19 Thorndike, L.L., Adult Interests, Macmillan Co. 1933; p.112

20 . . . Adult Training Bulletin, Navpers 14941, 11 Nov. 1946; p. 2.

problem is not its solution, however, and the writer does not believe that the addition of an instructor training course to an already crowded eight or twelve weeks schedule will go far enough toward the development of a petty officer into a good instructor. This, as will be seen later, is one of the requisites of a good officer.

But there is more to say about the Navy Schools. In addition to those types already mentioned there are other enlisted men's schools, training facilities, and training activities established along both coasts and at outlying bases. In this group there are Fleet Training Centers, Submarine School, Salvage School, Damage Control Training Centers, Amphibious Training Bases, Sonar Schools, Fleet Gunnery and Torpedo Schools, and the like.²¹ The courses offered vary in length from one or two days to six months and include training in practically every type of activity carried on in the Navy. Listed in Table III are a few of the courses which are typical. All of these courses are designed for further specialization²² and, except for the last three listed, can in no manner be considered as improving a man's general education. Code agrees with the Navy system of specialization but he would certainly not be content to see the enlisted man's education centered solely on technical subjects.

²¹ Ibid., p. 12

²² See Appendix IV

"We believe profoundly that to limit the education of any part of the population to strictly vocational or technical subjects is not in accordance with the principle of the 'square deal.' The persons to whom such a limitation is applied are shut out in advance from interests and activities in which they are entitled to participate. Specialization is of immense importance and requires no apology; but it should not be confused with the aims of liberal education (culture)"²³

TABLE III

<u>COURSES</u>	<u>LENGTH OF COURSE</u>	<u>CAPACITY</u>
Radar Countermeasures	2 days	15
Chemical Warfare	1 day	35
Shallow Water Diving	3 weeks	12
Fueling at Sea	1 week	50
Miesel & Hydraulic	14 weeks	50
Sonar Operators	24 weeks	90
Landing Craft	12 weeks	100
Rail Handling	4 weeks	varies
carpentry	6 months	84
Refrigeration	6 months	15
Basic Electronics	6 weeks	14
Fire Fighting Instructor's	1 month	varies
Instructor Training	varies	varies
Naval Justice	7 weeks	50

(Extracts from List of Naval Schools, Training Facilities, and Activities.²⁴)

²⁴ U. S. Naval Training Bulletin, Navpers 14948, 15 Nov. 1946; pp. 12-34.

EDUCATIONAL SERVICES

The Navy Training Schools and the training courses have each been established to perform a very definite and many times a quite limited objective. However, one must not be too critical of the Navy's training program until he has considered other advantages offered.

In February 1943, the Educational Services program was established for the purpose of; assisting men to make use of leisure time to further long-range personal ambitions; to enable them to gain a better understanding of the Navy's role in the war; and to know more about the major objectives of the Navy and their parts in accomplishing those objectives. From the outset the program embraced both educational and informational functions.

Under the educational function, which still continues, the Navy undertakes to offer to all personnel opportunities for study and facilities for developing recreational and vocational interests of an educational nature. The informational function is designed to interpret to the individual his own role and that of the Navy in maintaining the peace. It seeks, also, to provide a medium for the development of intelligent attitudes and opinions on subjects of concern to all citizens.

The program includes opportunities for class study under semester instructors, for enrollment in university extension courses and correspondence courses at high school and college

levels through the U.S. Armed Forces Institute,²⁵ and self-teaching text books. These types of studies have been given direction and motivation through educational counseling and a program of testing. Through films, pamphlets, charts and maps, lectures, and the like, Educational Services attempts to bring to the attention of naval personnel the significant information on such subjects as the role of the Navy in war and peace; the role of the United States in the community of nations; and their responsibilities as members of the Navy and as citizens.

The program has demonstrated its worth to the extent that it is now considered an integral part of naval training and its various services are being closely knit into the general program under which the Navy trains and educates its officers and enlisted personnel.

At present the program is administered in all ships and stations by collateral duty Educational Services Officers. Current plans provide for 54 full-time Educational Services Officers, located at key stations throughout the Naval Establishment, to supervise and assist those officers who have been assigned the collateral duties of Educational Service Officer of units in their respective areas.²⁶

25 An Official Army and Navy Agency, with Headquarters at Madison, Wisconsin, and overseas branches in various parts of the world. Hereafter referred to as USAFI. There are 73 cooperating universities and colleges offering courses through the USAFI.

26 U.S. Naval Training Bulletin, Navpers 14943, Nov. 1946; pp. 5-9.

What services does this program offer? The services include correspondence courses, self-teaching and self-study courses, educational advice and information, testing, and reports of tests and course completions for the purpose of secondary school and college accreditation.²⁷

Educational Manuals are available in the form of self-teaching texts for individual study, and reprints of standard texts designed primarily for use in group instruction.²⁸ The Manuals cover a variety of subject fields at the high school, junior college, and university level. A few subjects are offered at the elementary school level.²⁹

"The correspondence courses, in some cases, consist of a number of booklets. In most cases, they consist of a study guide plus one or more standard or self-teaching text. In all cases, they include assignments which the student is to prepare and mail to USAFI for lesson service. Lesson service means not only grading papers, but also indicating where the student has made errors and making individual comments and suggestions to the student."³⁰ The correspondence courses pro-

²⁷ Bureau of Naval Personnel Training Bulletin, Navpers 14944 15 July, 1945; p. 32.

²⁸ Group instruction consists of informal classes of voluntary students meeting during off duty periods with a voluntary instructor; officer or petty officer. In Oct. 1945 the Commander-in-Chief, Pacific Fleet, authorized "the conducting of classes during duty hours when practicable." Bureau of Personnel Training Bulletin, Navpers 14935, Oct. 1945; p. 34.

²⁹ See Appendix V for description of typical manuals.

³⁰ Bureau of Naval Personnel Training Bulletin, Catalogue-3rd Edition 1 Oct. 1945; p. 2.

vide a wider coverage of the subject fields than do the Manuals.

Here the Navy is veering in the direction of the goal of true education--"the intensive cultivation of a broad range of wholesome social interests together with provision for intelligent means of satisfying these interests."³¹ Here is a program that, if nourished and encouraged to expand, may well provide the necessary balance to the overemphasized technical training. Whatever its merits, the reader's attention is directed now to its fundamental weaknesses which will be referred to again, namely, the voluntary nature of the program and, its administration on a collateral duty basis.

LIBRARIES

Before concluding an examination of educational and training opportunities in the Navy, mention should be made of another facility available to the enlisted man in his search for a more satisfying education.

In each ship or station, except tugs and other small craft, there is a library. Books are selected in the Bureau of Naval Personnel and supplied on the basis of personnel complements. Battleships for example are allowed from 1,100 to 2,000 volumes, approximately one volume per man, while submarines, with an average complement of 90 men, are allowed 150 volumes. The types of books provided are representative of those found in the typical American city lending library, with the emphasis

³¹ Kettle, J. C., A Social Basis of Education, Thomas J. Crowell Co., 1934; p. 31

being placed more on recreational than on instructive literature.

The writer knows of no study that has been made concerning the use of the naval library facilities but no doubt the amount of time spent in reading varies with the individual enlisted man and depends to a great deal upon his educational level. In a survey of Maryland youth in 1938 it was found that,

"One of the desirable effects of increased schooling is to substitute recreational reading for sheer aimlessness during leisure time. Of those young people who have completed the 7th or 8th grades, 17.9 percent spent most of their leisure time in reading and 15.8 percent in loafing. On the other hand 32.2 percent of high school graduates usually read during their leisure time and only 5.9 percent loafed."³²

"There was found a progressive increase in the use of libraries with each grade level attained in school. During the preceeding year, only 23.3 percent who had completed the 8th grade had made use of available library services while 54.8 percent of the high school graduates and 74.1 percent of the college graduates had done so. In other words the longer young people are exposed to the culture that formal school provides, the deeper and more enduring is their appreciation for the kind of pleasure and instruction which libraries can offer."³³

If these findings are applied to the enlisted population of the Navy it becomes evident that the naval libraries probably do not contribute greatly to the average enlisted man's education.

³² Ell, J., Youth Tell Their Story, American Youth Commission, American Council on Education 1938; p. 186.
(Based on the confessions and attitudes of 15,628 young people in Maryland between the ages of 16 and 24.)

³³ Ell, J., p. 17, -18.

CHAPTER III

PRESENT PROGRAM IS UNBALANCED

Chapter II was a review of the Navy's post-war educational and training facilities. It included a survey of training for promotion and promotion requirements; the content of training courses and the offerings of various classes of Naval Training Schools were examined; the Educational Services program was described; and, the Naval library facilities were mentioned.

The evidence points to the fact that the Naval training program provides "know how" in abundance for the man working and studying on his way up to chief petty officer; but knowledge of the sort that governs one's quality of thinking and upon which one builds a philosophy, is being neglected. The program is out of balance and results in the production of highly trained, narrowly educated individuals whose capacities and interests are not kept abreast of their opportunities.¹

One task of management is to make every worker as effective as possible in his work unit. To achieve this, three elements must be given due consideration. These are;

Capacities - referring to those abilities, to those attainments, inherited or acquired, that a worker has, is capable of, and must, to a certain degree at least, exercise in his work.

Interests - Not only an individual's desires and ambitions, but also his instinctive, impulsive tendencies, vague yearnings, and ill-defined cravings that may or may not stir him to his

1. Ralph Davis, Lecture 10, Business Organization 636, The Ohio State University, Spring Quarter 1947.

fullest action in performing his duties.

Opportunities - not only opportunities for advancement, but opportunities to exercise his capacities and to satisfy his interests.²

"Every worker brings to the job a certain amount of potentiality, of capacity for growth. His value to his employer lies not only in what he is but also in what he may become. If he is gifted with that unusual quality of clear foresight and ability of self analysis, he will go far in the attainment of those potentialities. But most of us are ordinary human beings with limitations, and we struggle along unintelligently, doing the work at hand as best we may, puzzling over the difficulties we encounter. Even those of us who have educational advantages are subject to this confusion in thinking; we need help."

"Personnel Management has made great strides in the field of training workers.... Industry is appreciative of the fact that insistence upon a narrow interpretation of the purposes of training is apt to defeat the larger purposes of educational effort, that training has advanced from something of value of increasing the effectiveness of the worker in his immediate work to something of value in increasing his effectiveness as a man generally, as a member of the organization generally, and as someone upon whom sometimes (although in ways not then obvious) greater and greater responsibilities will probably be laid."³

The Navy has not been backward in recognizing the need for training its personnel for greater professional and vocational responsibilities; but does it recognize the scope of training or education that is necessary?

What better evidence is there of the Navy's failure to give our children a well balanced education than a recent quote from the Pacific Fleet quote for

² Lott, Lotz, Lotz, Lotz, and Lotz, Personnel Management, 10th ed., 1941; p. 12

advancements to first-class petty officer during a certain period was set at 492. There were 747 men eligible for advancement but only 147 of these were able to pass their promotion examinations.⁴ Only 20% of those eligible from the standpoint of other requirements made the grade. Did the others lack interest, or capacity, or both? If there was a lack of interest then here is surely an indication of a need for promoting general education; for the attitudes of mind and interests are educational factors⁵ and intellectual interests can be cultivated by education.⁶ It is doubtful, however, that a lack of interest existed here for as Thorndike says:

"There are certain very general and dependable sources of interest, such as the general sense of well being, sensory comfort and pleasure, the enjoyment of mental activity rather than emptiness, the approval of others or the expectation of it, self approval, and the feelings of competence, mastery and victory. Any activity which causes these gains interest thereby. They are rooted in the original nature of the human species. They operate at low levels of ability as at high."⁷

If these men lacked capacity was it due to their inherent limitations or was it failure to develop to the fullest within their inherited structure? Man's inherited traits and characteristics establish the structure within which he expands his capacities. This expansion and development is governed by

4 U.S. Naval Training Bulletin, Navpers 14956, July 1947; p. 18

5 Wiggan, A.L., Op. Cit. pp. 14, 104

6 Wiggan, A.L., Op. Cit. p. 56

7 Thorndike, E.L., Op. Cit. p. 56

his environment and for most individuals the capacity for self improvement and advancement is seldom restricted by inherited weaknesses; any lack of capacity must usually be charged to environmental conditions. "The inherited structure of the organism is a basic condition of all learning; it sets the bounds and framework within which practice has its influence."⁸

Since the Navy's recruits are at least average men, if not above average, in intellectual endowments the writer is inclined to the opinion that the failure of 80% of the eligibles to qualify for promotion was due rather to an inadequate development of their capacities than to inherent weaknesses.

Was this inadequacy of a technical nature, or did it lie in a poor educational background? With Navy Schools stressing technical training as they do and with the rules for promotion making the passing of practical factors a prerequisite to becoming eligible for subject examinations, it is concluded that here again the failure should be charged to a lack of general education, the kind of education that develops those mental habits and attitudes which are determiners of a man's present and future behavior.

One might propose the idea that lack of motivation plays a large part in the failure of these individuals to prepare themselves for the examination. It may be that some of these individuals had many vacancies existed in the higher ratings, believing that the goal would be easy to reach. The incentive

⁸ Wood, L. S., The Psychology of Human Learning, Longmans, Green and Co., 1940; p. 3

of higher pay and added prestige was there. It was not for the mere asking, however, it had to be worked for. Perhaps there was a need for these individuals to be better informed of the principle that true rewards must usually follow real achievement and are seldom handed out gratis.

EDUCATIONAL GROWTH

Is the Navy to continue with a program that emphasizes merely specialized and technical knowledge and allows the broader aspects of education to grow by itself? Or, will cognizance be taken of the need for providing its petty officers with facilities for expanding their capacities in all directions and aid and stimulate that growth? Is there time, during the ten or fifteen years available, for the Navy to do both? If not, then how much training, routine work, drills, or specialized study can be sacrificed to make room for general education?

In this age of complicated and highly technical machines, the age of electronics and nuclear physics, few persons will argue against specialization. The Navy must have specially trained technicians in order to service, supervise, and employ its many mechanisms to advantage. But in making rapid strides in this direction hasn't the Navy in the past, and isn't it apt to continue in the future, to neglect the development of its potential officer material in such qualities as leadership, initiative, vision, intelligence, moral courage, and endurance? In any event, the trend in the Navy is toward

more specialization and perhaps it need be; but it is submitted that both facilities and time are available to superimpose a broader educational program upon the technical program without detriment to the latter. In fact technical education can and should be strengthened by such a move.

"The competition between vocational education and cultural education can never be solved by a selection between alternatives. There is but one practical solution (which will genuinely conserve progress toward a higher culture.) That solution is a combination of the two. Cultural education looks toward the expansion of interests and the refinement of appreciations. Vocational education looks toward the improvement of means by which interests can be satisfied and appreciations exercised. When so interpreted, neither is the enemy of the other; indeed, neither is even the competitor of the other. The two are not only compatible, they are mutually necessary."⁹ Can not the same reasoning be applied to specialized and to general education within the naval vocation?

During World War II there was evidence on every hand that short periods of intensive training were adequate to develop the average American boy into an effective fighting man. It was the writer's privilege to command a newly commissioned destroyer¹⁰ whose crew of 340 could boast of only 40 trained men. The 300 "land lubbers" did not require years or even

⁹ *ibid.*, . . . 22. lit. p. 111

¹⁰ *ibid.*, . . . (64) Commissioned 23 April, 1940, reported to service for duty on 30 June, 1940.

several months to be trained to a high standard of efficiency. In a matter of weeks, seven weeks to be exact, the ship and her crew were declared by the Commander Destroyers, Atlantic Fleet, to be ready for combat. This case is cited as but one small example of what was being done throughout the fleet. Adequate training was being accomplished in a short time. Is it not logical to conclude that, during peace when more time is available for training, that much of that time could be given over to education?

It is the Navy's stated policy to make of a petty officer, "first a leader and second a specialist." Little is left undone in providing for this second area of his educational growth but too much is left to chance in the first. As he progresses up the promotional ladder his education is broadened ~~by the schools of~~ ^{by} experience and ~~by~~ association but these schools are haphazard at best and may well instill habits and attitudes quite the opposite of those needed by a successful officer.

Training for leadership has not been entirely lacking. The petty officer does meet leadership problems frequently and with success. However, every leadership problem consists of three interacting primary factors--the leader, the people led, and the particular situation. The petty officer leadership training is on a day to day basis where these three factors change but little and it does not adequately prepare the leader for the future in which the situations are radically changed and where, as in the case of World War II, so many of the people

work."¹² The ten years or so that is available to the petty officer is too short to permit of adequate general education through experience alone. Formal education is concentrated vicarious experience and is needed to supplement the day to day experience that accompanies Navy life.

The summary of the writer's thoughts on this whole subject of education of petty officers is:

1. Educational growth, and with it the development of officer-like qualities, has been limited by a premature leaving of school.
2. The Navy's petty officers do possess potential capacities capable of being developed into excellent commissioned officer material.
3. Training, as now given, and years of experience will not in themselves provide for adequate development of the capacities inherent in the petty officers.

"Even the most ardent advocates of vocationalism are disposed to concede that education must do more than develop efficiency in a given vocation. The vocational training must have a certain background so as to provide for adaptation and growth."¹³

4. Education that was not acquired in school must be acquired in the Navy. Self-directed study carried on voluntarily amid conditions not conducive to study, will not make up the deficit. Neither will self-education through reading.
5. The solution lies in adopting a program of general education, a program so planned and controlled that it will enhance and not impede the continuation of essential technical training.

¹² Report, Training, by Stop Learning, Harcourt, Brace & Co. 1927; p. 6

¹³ Report, Training, by Stop Learning, p. 45

CHAPTER IV

PROPOSED EDUCATIONAL PROGRAM

Any plan designed to develop the educational growth of Naval petty officers would do well to have as its guiding principle that which was embodied in Thomas Jefferson's Virginia Plan. It was Jefferson's theory "that every youth should be educated up to the limits of his capacity."¹ Jefferson did not believe that time, money or effort should be spent in trying to cultivate talent or ability that did not exist. His plan was to include every child in the first phase of schooling but to cull the best and most promising students for further education. By three stages of selection in the elementary and secondary schools his plan was designed to provide a college education for the few top students who had proven their capabilities.²

By providing the facilities for educating its petty officers; stimulating the use of those facilities through proper incentives, and adopting a procedure of selecting the most capable petty officers for further education, the Navy can be assured of gaining two principal objectives. (1) It will raise the general educational level of all petty officers above that now attained under the present program, which stresses technical knowledge and practical training and barely touches upon general education. (2) It will also develop the capacities of the most intellectually industrious persons to a level at

1 Brameld, Theodore, Worker's Education In The United States, Harper & Bros., 1941; p. 233

2 Adams, Truslow James, Op. Cit. p. 49

which they may be able to adjust, with little difficulty, to the responsibilities and authority of a commissioned officer should the demand arise. In addition to these gains which will accrue to the Naval Organization, the individual's rights to develop himself as a man and as a citizen will be safeguarded. This is certainly a desirable secondary objective of a Navy educational plan.

In order that the development of the petty officers may be in the direction most beneficial to the Navy, the plan should center in the growth of those attributes of leadership and executive ability desired in the character and personality of a naval officer. John Paul Jones in a letter to the Naval Committee of Congress, Sept. 14, 1775, named some of the desired qualities. He wrote in part; "It is by no means enough that an officer of the Navy should be a capable mariner. He must be that of course, but also a great deal more. He should be as well a gentleman of liberal education, refined manners, punctilious courtesy, and the nicest sense of personal honor-- he should be the soul of tact, patience, justice, firmness and charity."³

In the contemporary literature on the subject we find this description of a good officer.

"The good officer understands discipline and personal example, how to work within a team, how to instruct, what is needed in leadership; further he understands the psychology of

groups and individuals, knows how to select men for particular billets, knows how to qualify himself and others for higher rank, how to prepare for combat, and how to lead men in combat."⁴

There is no problem in deciding what it is that the Navy's educational program is to provide. The problem is to set up the program, adapt it to the present training system, and to administer it effectively.

GENERAL PROGRAM

The program that is proposed here may appear at first to be on a scale so large as to be impracticable. The cost is great in manhours and the funds required are not insignificant.⁵ The proposed program is not a simple one; but neither is the educational problem involved. It is submitted that the program is a feasible one, however, and any decision as to its adoption or rejection should rest on a consideration of the need for promoting the educational growth of petty officers rather than on the magnitude of the task involved.

The program as proposed, consists of two major parts. Part I is a plan for the education of enlisted men on board ships and stations during regular duty hours. Part II is a plan which provides for the careful selection of a number of the best qualified petty officers for additional education at an accredited civilian college or university.

⁴ Remington-Rough-Case, The Psychology of Military Leadership, Prentice-Hall, Inc., 1943; p. VI

⁵ Individual students will not be required to contribute toward their own education.

GENERAL PLAN: PART I

To raise the liberal educational level of all petty officers it is proposed that measurable educational growth be tied directly to promotion requirements. The plan, call it plan "Able," requires that an individual show a certain minimum educational achievement and capacity for higher learning prior to qualifying for advancement to each petty officer grade. The educational achievement and capacity is to be measured by General Educational Development Tests⁶ devised by USAFI. The minimum educational level required of an individual becomes progressively higher with promotion to each higher grade; it never becomes so difficult, however, as to discourage an individual of normal learning capacity.

Intellectual endowments are known to differ with individuals but they are distributed along a normal frequency curve. This is the type of curve usually obtained where a large number of persons are measured in some mental characteristic. The majority of those measured score near the normal and the further one departs from the normal in either direction the fewer individuals he finds.⁷

Level recruiting standards, which include an Applicant Qualification test, are designed to admit into the Navy only those individuals who possess normal intellectual abilities.

They measure ability to learn, to think, and to understand instructions.⁸ But it serves very well to limit the

⁶ See reference to USFI for an explanation of these tests and standards.

⁷ See Psychology of Educational Statistics, revised edition, Harper Bros., 1942; p. 190

⁸ See General Intelligence, rev. 1946, Dec. 1946, p. 1

recruits to those persons of normal intellectual abilities, as compared with the population of the whole country, is evident if the median school grade completed is accepted as a criterion. The Naval recruit median averages about 10.5 over a period of years whereas the national median is 8.4.

That a large proportion of normal intellectually endowed enlisted men would welcome rather than be discouraged by a plan to further their educational growth is indicated from the following.

"About 40% of our youth would go farther in school if the opportunity were provided them. 46.8% of twelfth grade graduates fail to proceed to a higher educational level because of lack of family funds."⁹

In the same study it was found that those who did not go to college, because they were not financially able to do so, possessed mental abilities that promised as high degree of scholastic success as those who successfully completed the first two years in college.¹⁰

In brief, plan "Able" is designed to encourage, and will not discourage, further educational growth of those normal enlisted men who aspire to higher ratings.

Specifically plan "Able" requires that an individual show an educational development level equivalent to that attained

⁹ Bell, A.S., Youth Tell Their Story, A study made for the American Council on Education, 1938; p. 66

¹⁰ *Ibid*, p. 95

by students who have successfully completed the 10th grade of school, before becoming eligible for promotion to a third-class petty officer rating. The requirement for advancing to a second-class rating is 12th grade level; for first-class promotion the requirement is college freshman level; and for chief petty officer the required level is that corresponding to the successful completion of two years work in a college of liberal arts.

Referring to Appendix III, it is seen that 58% of the naval recruits have completed the 10th grade of school prior to entering the service. For these individuals the third-class educational requirement is already met and there is no compulsion for further study. However, the goal should be highly motivating to the 34% who are but one or two grades short of the required level. This group, if encouraged by adequate facilities for study and given assistance and guidance, may be expected to make a determined effort. Unfortunately this initial requirement may serve to discourage the lowest 7% of the recruits, for they have not yet completed the 8th grade. It need not discourage even these, however, for there is no time limitation as to when an individual must qualify for a third-class rating and even the most retarded may eventually reach the goal. It might be added here that a desirable feature of this whole plan is that each individual is allowed to progress at a rate of speed best suited to his intellectual abilities.

In general the above remarks apply also when one considers the second-class petty officer requirements. Almost 28% of the

recruits have already qualified educationally prior to enlistment. There are, however, 30% within easy striking distance of the goal in addition to any of the remaining 41% who qualified for third-class after entering the service.

Thus far in their climb up the promotional ladder it is noted that 28% have not had to advance their educational level under the requirements of this plan; but the next step is a different story. Only 3% of all recruits can be promoted to first-class without taking extra courses of study subsequent to enlistment. The goal is not too high, however, and should be highly motivating to all second-class petty officers whose educational level is only one year below this new requirement.

By the time an individual prepares for promotion to chief petty officer the plan is working at its maximum efficiency. For to make this step, over 99%, all but a mere handful, must have studied to improve their educational level.

Summarizing the above, one sees that the plan serves well to promote educational studies by nearly all of those individuals who are competing for first-class and chief petty officer ratings. The plan is weak in that a large number of individuals have already met its educational requirements for advancement to second-class prior to enlisting; an even larger number have previously qualified for third-class and need not study further; and a few individuals can advance all the way to chief petty officer without making a special effort to raise their general educational level above that which obtained upon enlistment.

Plan "Able," however, has another feature designed to

overcome the weakness just mentioned. This is the additional requirement that every petty officer complete a minimum of two educational study courses while serving in his present rating before becoming eligible for promotion to the next higher rating. The two courses may be elective but they must lie within those subject fields selected by the Navy Department as contributing most toward the development of a person's leadership qualities. This feature serves to bring every petty officer into the educational program. It will stimulate the high level men into action sooner and at the same time will not overburden the low level men for these individuals will automatically meet this additional requirement while studying to meet the basic requirement of the next higher rating.

That the proposed plan is still weak in one respect can be seen from the following example.

Suppose recruit "A", upon first taking a GED Test in the Navy, obtains a score which places him at the 10th grade level. He is educationally qualified for promotion to third-class without further study and there needs to be an incentive added to our plan to bring him into the program during the year or so while still a non-rated man. In order to motivate these individuals during their pre-petty officer period it is proposed to credit each individual with a promotional factor (see table IV). Each individual will be credited with a factor based upon his required educational level. The factor is to be established by a regular promotional examination score in order to compare the individual's score to the competitive standing of the

promotion list. For example "A's" factor is 1.00 whereas he can, by study, raise his GED level to the 11th or 12th grade, and obtain a factor of 1.01 or 1.02. These factors listed in Table IV are for purpose of illustration only. The factors assigned for each GED level should be carefully determined so as to motivate "A" to study, while at the same time avoid placing "A" at great disadvantage with his competitors who entered the Navy with a GED level of say, a college sophomore.

TABLE IV

Promotional Factors to be credited to each petty officer based upon his GED level

GED Level (School Grade)	Promotional Factors			
	3rd Class P.O.	2nd Class P.O.	1st Class P.O.	Chief P.O.
10	1.00	-- ¹	--	--
11	1.01	--	--	--
12	1.02	1.00	--	--
13	1.03	1.01	1.00	--
14	1.03	1.02	1.01	1.00
15	1.03	1.03	1.02	1.01
16	1.03	1.03	1.03	1.02

(1 Not eligible for promotion)

It is seen that the proposed plan will result in promoting the educational development of all petty officers below chief and that, upon reaching a chief's rating, an individual will have acquired a comparatively broad liberal education. What happens then; will he, having arrived at the top of the enlisted ladder lose interest in further study and development? The answer is no. It is the writer's opinion that the study habit will be so instilled in a man and his interests so broadened

that he will, of his own volition, continue to expand his educational achievements. For, "other things being equal, interest will increase as learning increases and adds ability."¹¹ To be assured on this point, however, is one of the aims of Part II of the educational program.

There are two principal objections that critics might raise in opposition to plan "Able." These are; first, the plan is not suitable for use in time of war because, when applied to any one individual, it extends over a period of years and during war promotion is too accelerated for the plan to be feasible; and second, any plan which involves all petty officers below chief petty officer, as well as a large number of non-rated men in training for third-class, is of such magnitude as to be impracticable of administration.

The first objection can be discounted readily. Most of the navy's planning in time of peace must necessarily be geared to thinking in terms of war but here is a plan whose function ceases when war comes. If peace can be maintained for some ten or fifteen years the plan will have served its purpose; namely, the better educational preparation of leading petty officers to assume the duties of commissioned grade when called upon.

As to the second objection it is submitted that this is a matter of opinion that may or may not prove well founded. Its correctness can only be accepted after a fair trial of the plan. Additionally, the plan calls for super-imposing another large task

¹¹ *McCall's, N.Y., Sp. Lit., p. 46*

upon an already well filled schedule of work and training. It will challenge the finest administrative qualities that the Navy can muster. But this should not mean casting the plan aside just because it might appear impracticable. Perhaps a careful survey of schedules, made in the light of the Navy's fundamental policy,¹² would disclose that much of the Navy's work is of a "make work" nature; that much of its training is carried beyond the point of profitable return; and that a considerable amount of work, training, and unproductive time could well be replaced by educational study periods and class sessions. If plan "ABLE" is not considered practicable, then how should the Navy proceed? Should it discard the plan in its entirety and turn to a less adequate one, more simple of execution, or, should it adopt the plan in part? It is recommended that the part plan be adopted for it might ultimately be expanded into the whole. It is recommended also for the very good reason that the writer can conceive of no substitute plan that would be more acceptable.

One substitute plan which suggests itself is submitted for consideration. Call it Plan "Baker." This plan calls for the preparation of batteries of aptitude or capacity tests by which the innate or inherited capacities and development of all recruits would be measured. The tests would be designed to measure such inborn capacities as general alertness, adapt-

12 "To maintain the Navy in strength and readiness to uphold national policies and interests, and to guard the United States and its continental and overseas possessions."

ability, reaction time, reasoning, ingenuity, social intelligence¹³ and others considered desirable in the character and personality of an officer. The validity of the test would of course have to be established by giving them to a large number of young commissioned officers to determine whether the better officers made the better scores.¹⁴

Under this plan each recruit would be screened by a test battery on three different occasions, such as 10, 14, and 18 months from date of enlistment, and the average of his test score taken as his final score. The need for more than one test is to average out errors introduced by the various testing conditions which could not be made constant throughout the Navy. Also, if only one test were given, a testee might be unfortunate enough to be physically or mentally upset on that day and his score would not reflect his usual aptitude.

Having determined the score for each individual, the Navy would classify the top 25 or 30% of the men as "prospective of-

13 The social intelligence tests would necessarily be based on social environment and experiences within the Navy. For this reason a Naval Social Intelligence Test would need be prepared as most of the social intelligence tests now in use are based upon community activities and situations which many Navy men have not had an opportunity to experience. "There is also a question as to whether social intelligence is essentially an innate thing such as abstract intelligence is considered to be. If the test measures something that is actually innate it must be assumed that everybody has had adequate opportunity to pick up information about (the same) social values and those who are more alert in this respect would be more inclined to pick up the information" H.E. Sells, Int. Lit. p. 104

14 Int. Lit. Vol. IV and V.

ficer material." Advancement into petty officer grades would be restricted to this select group and the Navy's efforts to promote general educational growth would be concentrated on them. The remaining 70 or 75% would be left with all opportunity for promotion into the petty officer grades closed.

Plan "Baker" would gain the same principal objectives as would plan "Able" but think of the sacrifice that would be made in the loss of morale by those individuals who were not selected. The developing and maintaining of a high morale is the primary objective of modern personnel administration¹⁵ and any plan which fails to include the building up of esprit de corps throughout the organization is not acceptable.

Even if it were agreed to adopt this highly selective plan and to take a chance on destroying morale it contains another objectionable feature that needs be considered. By closing the petty officer ratings to 70% of the recruits the Navy would deny itself the services of many individuals who, though not potential commissioned officer material, would surely be excellent petty officers. It is entirely possible that some of the select individuals would make less desirable third-class petty officers than some of those not selected for there is definite evidence of an occupational hierarchy. That is to say, some jobs are performed better by persons possessing a certain minimum capacity than by persons whose capacities are below the level that the requirements of the job; there is a

15 Harvey Walker, Public Administration in the United States, Harrar & Winchart, Inc., 1937; p. 192

top level of intelligence required by most jobs and a person, whose intelligence is above that level, will not be satisfied in that particular job. It is natural for individuals to make adjustments during their work life and eventually to settle at an occupational level at which their capacities are closely matched with the occupational requirements.¹⁶

If the Navy is not to adopt plan "Able" in full then it should be adopted in part rather than to turn to some substitute plan. Specifically it is recommended that plan "Able" be made applicable to all second and first-class petty officers and that its requirements be waived for third-class and those who are in training for third-class. By eliminating this group from the educational program it would be brought more surely into the realm of practical administration. At the same time the plan would still fulfill its most important objective; the development of the educational level of the most capable petty officers to enable them to adjust more readily to those responsibilities that may later be demanded of them as commissioned officers.

ADMINISTRATION OF PLAN "ABLE"

The implementation and administration of the proposed plan is not as difficult at first thought. Excellent facilities for education, even with expansion, will serve the purpose. The Naval Air Station, Alameda, California, provides a fine example of the type of institution that could be developed for the purpose. The Naval Air Station, Alameda, California, is a well-known institution and has a long history of providing excellent facilities and equipment for the purpose.

The Educational Services Officer¹⁷ at each ship or station is already assigned to perform the various duties relating to the non-military education of those individuals who desire to improve themselves during off duty periods.

The educational opportunities offered by USAFI are at present on a purely voluntary basis. The correspondence courses self-teaching and self-study courses, educational advice and information, testing, and reports of tests and course completions for the purpose of school accreditation are all available for the asking. Any Navy man may avail himself of the opportunity to promote his educational growth through USAFI courses. That this voluntary arrangement attracts but a small percentage of the naval population, however, is shown in Appendix VII. During the period covered, March-June 1947, the average monthly enrollments were only 1,419 and the total number of active naval enrollees on June 30, 1947 was only 44,003. Therefore, if the shift is made from a voluntary to a required basis, as plan "Able" would do, USAFI would need to expand its facilities, to provide for servicing an estimated 100,000 naval enrollees.¹⁸

¹⁷ Hereafter referred to as ESO

¹⁸ The exact post war strength of the Navy has not been determined, nor have the percentages been set up for the petty officer grades. One estimate of the total enlisted population and its distribution in ratings that the Bureau of Personnel, Allowances Section, has made is as follows:

Year	Total Strength	Non- rated	3rd Class P.O.	2nd Class P.O.	1st Class P.O.	Chief P.O.
1950	385,000	183,000	57,000	53,000	47,000	25,000

USAFI would also need to expand the development of its GED Tests. As now developed the Tests cover the high school graduate level and the college sophomore level. The proposed plan, if adopted, would require Tests for all levels between the 12th and 16th grades. This does not appear to be too difficult a problem.

As stated earlier the educational functions at each naval activity are presently assigned to an ESO. The educational duties of this officer are collateral. In his spare time, of which there may be little, he is available to assist and encourage individuals to pursue educational studies in a purely voluntary basis. The ESO's primary duties may be assistant navigator, ship's chaplain, anti-aircraft defense officer, turret and division officer, or the like. Whatever the nature of his primary duties it follows naturally, that when pressed for time, or when he otherwise falls behind in his work (as will surely be the case at times,) his collateral or subordinate duties will be the first to suffer neglect. Leaving the performance of work as important as promoting the educational growth of petty officers, to an officer whose full time cannot be devoted to the job will defeat the whole program at the outset. If there is to be a successful and effective program at each naval activity, then that program must be in charge of an officer free to devote his full time thereto.¹⁸

¹⁸ If this paper serves no other purpose than to initiate a program to move naval education from its present collateral status, of a side-arming off-duty hour, to its rightful and integral position as a primary function in the daily routine, the writer will be satisfied that his efforts have produced a valuable result.

If the proposed part plan is adopted, the ESO duties will expand in content as well as in volume. The plan would require educational counseling, curriculum planning and class scheduling, class and individual instruction, arranging for study periods and the physical facilities for study. In brief, all of the details of administering and supervising a school program would be placed on the shoulders of the ESO. Furthermore, and perhaps the most difficult task, the school program would need to be coordinated with and superimposed upon the many other activities essential to the maintenance and operation of a ship or station.

The adoption of this program calls not only for the full time work of the ESO. It calls for the establishing of an educational department in the organization of each naval activity. As the writer visualizes the education department its position in the organization would be co-equal with gunnery, engineering, communication, and other departments already established. Since the work of the education department would involve personnel of all other departments its head should be equal in rank to other department heads. He would be the coordinator of all educational activities within the ship or station and charged with the responsibility of preventing the relegation of the educational program to an inferior position. Over him of course stands the executive officer as coordinator of the activities of all departments. The executive must also be able to instill a cooperative attitude in the heads of the other departments, for a merely tolerant attitude will not

suffice to enable the new department to assume its rightful place in the organization. The educational program is an "all-hands" program and it will require full cooperation from everyone. The staff of the educational department would consist of regularly assigned officers and petty officers in such numbers as are necessary for administering the program. This staff would comprise the regular instructors, counselors, record keepers and the like, and would be assisted by qualified officers and petty officers of other departments when needed and as directed.

The details of the organization and operation of the educational department are left to those more qualified than the writer to develop. However, mention will be made here of a few items which will require careful consideration.

- (a) Deciding upon the amount of time available for promotion of general education; scheduling school hours and study hours.
- (b) Provision for selecting and training instructor personnel.²⁰
- (c) Provision for students to progress in their work at a speed commensurate with individual abilities needs, interests, and scholastic and cultural backgrounds.
- (d) Providing physical facilities for study and class room work.
- (e) Selection of certain core subjects and elimination of other subjects from the curricula.

Before concluding this discussion of administration it seems appropriate to mention motivational techniques that

²⁰ See especially the latter's thesis by Lieut. A.M. Cornell, "The Qualifications to be Sought in the Selection and Retention of Naval Officer Instructors: 1947," The Ohio State University, Columbus, Ohio.

might be employed.²¹

It would appear that special incentives will not be needed to stimulate the petty officers to endorse the proposed plan. Several incentives already exist in the established promotion system with which the plan is to be linked. Others are contained within the plan itself.

The reward of promotion, which comes to those who qualify and which is denied those who do not elect to study, is a valuable reward and becomes a progressively higher one. Promotion also satisfies a desire for pre-eminence and for earned recognition. The desire to add to one's social and economic security is satisfied by promotion.

Completion of study courses which are not rewarded by promotion provides, nevertheless, a sense of accomplishment and may add to a feeling of security. The posting of records of progress in studies satisfies the desire to have one's accomplishments known to his fellows. A still stronger motive for doing good work is a certain knowledge that one's superiors are familiar with one's abilities. This recording of a man's GED Test score will tend to keep superiors informed as to a man's educational level.

One highly motivating incentive is immediacy of reward. This will have to be provided locally by such methods as instructors and EEOs may devise. Recommending a man for an

21 For a more complete discussion of motivational techniques see unpublished Master's thesis by Lieut.-Comdr. Roger S. Smith, (Line) USN, entitled, A Scheme for Encouraging The Application Of Motivational Techniques by Officers Administering The United States Navy; 1947, The Ohio State University, Columbus, Ohio.

extra liberty or granting him a special privilege of "sleeping in" after reveille are examples of immediate rewards.

The competitive spirit is aroused by participation in group instruction. Here a man's ability is being constantly observed and judged by one's fellows and superiors. He is motivated to be as good or better than the other fellow.

Without discussing them there are listed here a few additional motivating techniques that seem to be inherent in the plan or readily applicable to it. These are:²²

- Beat your own best record
- Challenge
- Punishment
- Set a moving goal
- Success breeds success
- Contest
- Prizes
- Do a little bit every day
- Intimate personal appeal

Inherent in the proposed plan is an incidental incentive that may play a big role in the work of many individuals. It will be especially effective for that large group of individuals who plan to leave the Navy for a civilian occupation upon the expiration of their enlistment, but who, for some reason decide to serve one more enlistment. This incentive to study is based on the fact that it is a general practice for employment offices throughout the country to inquire as to an applicant's scholastic record. The higher the school grade completed the better is the applicant's chance of being accepted for the job

²²For suggested list of techniques in motivation collected
J. H. Hoops. See also table, *Psychology*, 644
Winter 1947.

he seeks. Likewise educational level is usually one of the factors used by industry in rating a man's job for purposes of wage determination.²³ The fact that industry and business organizations in general place much emphasis on a man's educational background should be a valuable selling point in interesting the Navy's petty officers in an educational program.

CHAPTER V

PROPOSED EDUCATIONAL PROGRAM (continued) AND SUMMARY

General Plan-Part II

In Chapter IV there was discussed a plan designed to raise the educational level of all petty officers and to assure the Navy that every individual, who reaches the grade of chief petty officer, will have acquired a liberal education equivalent to that obtained by the average college student who successfully completes his sophomore year. In this chapter a plan will be proposed to provide for the selection of a number of the best qualified chief petty officers and the furtherance of their college education at an accredited civilian college or university.

It is specifically proposed that as many chief petty officers as can be spared from their regular naval duties be enrolled in college each year for a course of study extending through two full academic years. The course of study would be patterned on those which lead to a bachelor of arts degree. The institutions at which the students would enroll are those 62 colleges and universities at which Naval Reserve Officer training units are established.¹

The size of this college program for chief petty officers will vary. It will be determined not only by the number of chiefs who can be spared, but also by the number of students in the classes which the colleges will agree to accept. The

total number of students enrolled in this two year program will probably average about 2500. Allowing for some "drop outs", it is estimated that about 1400 new students will be ordered to report to colleges each fall. This program is by no means large enough to equip all of the Navy's chief petty officers with a college education but it will be a worthwhile beginning and deserving of consideration for later expansion.

The number of chief petty officers who can be spared from regular duties will vary. However, as long as it remains a Naval policy "to maintain a reasonable excess of petty officers over peace time requirements in order to facilitate war time expansion,"² there will be some chiefs available for the program. What is considered as a "reasonable excess" will fluctuate as the stability of world peace fluctuates and it is difficult to arrive at a satisfactory conclusion as to the probable numbers of chiefs in excess at any given time. In 1940 the excess rose to about 75% over actual needs; on 1 April 1947 it was 26.9%. No doubt the trend is downward now that the Navy is facing a period of budget cutting and it is estimated that the excess will be stabilized in the neighborhood of 10%. Taking this figure tentatively and applying it to the 25,000 chief petty officers which the Navy expects to have "on board" in 1950³ will give an estimated 2,500 chiefs available for college work at any given period.

² Arden, A.A., Op. Cit. p. 27

³ See Ch. IV, p. 80

Could the colleges handle this additional load and would they be willing to accept these chiefs as students? The answer is "yes." Present day enrollments at colleges throughout the country are greatly expanded over pre-war enrollment by the returning veterans and facilities are taxed to the limit. This condition, however, will obtain but a few years more and as veterans leave the schools the numbers of other students, including Naval chief petty officers, can be increased. Even now it is unlikely that the 52 colleges concerned would refuse to admit an average of 30 chiefs per institution per year.

That the colleges would accept these chiefs as regular students and grant them advanced standing based upon certain minimum scores obtained on the GED Tests is a reasonable assumption. These tests were intended primarily as a means for determining the veteran's appropriate educational placement when he returned to school and the American Council on Education recommends the use of GED Tests scores as a basis for granting semester hours credit as well.

For the college battery the following recommendations are made:

Test I. It is recommended that a standard score of 50 be considered the minimum score which may be used as a basis for granting 6 semester hours credit in English composition.

Test II. It is recommended that a standard score of 55 be considered the minimum score which may be used as a basis for granting 6 semester hours credit in a survey course in the social studies.

Test III. It is recommended that a standard score of 57 be considered the minimum score which may be used as a basis for granting 6 semester hours credit in a survey course in natural science.

Test IV. It is recommended that a standard score of 53 be considered the minimum score which may be used as a basis for granting 6 semester hours credit in a survey course in literature."⁴

Of course, the colleges are not bound to accept the Council's recommendations and it is probable that some will not modify their entrance requirements to consider GED Tests scores. The Ohio State University⁵ and the University of Minnesota⁶ are two of the country's leading institutions that do recognize GED Test scores as indicative of an individual's educational level.

But whether a college does not give credit, or modify its entrance requirements, in recognition of education gained by an individual while serving in the Navy, is of no real significance. In proposing this chief petty officer program to the 52 institutions concerned, the Navy should request that the chiefs be accepted as "special students"⁷ and it does not seem unreasonable to expect these institutions to agree to such a proposal.

4 Tuttle, G.P., A Guide To The Evaluation Of Educational Experience In The Armed Services, Complete Edition, John S. Swift Co., Inc., 1946; p. 48

5 From a statement of W. Lloyd Sprouse, Assistant Examiner, The Ohio State University Entrance Board.

6 Gallis and Wrenn, The GED Tests As Predictors Of Scholastic Success, Educational and Psychological Measurement, Spring 1947; Vol. VII, No. 1, p. 98

7 A "special student" is defined by The Ohio State University as one who does not meet all entrance requirements and therefore not eligible for a degree. However, it would be desirable for these persons to get degrees if they can subsequently qualify.

SELECTION OF STUDENTS

If this program is to meet with success and continue in favor with the participating colleges then there must be a careful selection of students. The procedure of selection needs to satisfy both the Navy's objective of selecting the best qualified men available and the colleges' requirements for acceptable students. Then there needs to be considered such factors as; officer like qualities; prediction of scholastic success; physical fitness and age; probable length of service remaining before becoming eligible for inactive duty; technical qualifications in rating speciality; and the individual's desire to attend college.

Basic requirements for consideration for selection are:

(1) The individual must have completed two years service in grade at the time he would enter college. This is to permit him time to become well grounded in the technical aspects of his career's rating through practical experience prior to absconing himself from the service; (2) He must meet the physical standards of a prospective officer; (3) He must make application for selection; and (4) He must agree to re-enlist for a six year period prior to being assigned to the program if selected.

The recommendation of the applicant's commanding officer will or should be one of the selection determinants, for sufficient personality tests can be developed and validated

Waller, R. H., Techniques of Alliance, Harper Bros.,
New York, N. Y., 1934, p. 10.

we must rely on the judgement of the applicant's superiors as to some of his officer-like qualities. For this reason it is proposed that, as soon as a man is advanced to chief petty officer, a qualifications record file should be started on him and entries recorded every six months. The present fitness report form used for commissioned officers would serve well as a qualifications record form.

Qualifications records are apt to be deficient in that they are frequently periodic appraisals made from memory and memory is sometimes faulty. Memory is influenced by more recent events and the record is apt to reflect accomplishments or failures of an individual to the exclusion of a proper consideration of judgements made earlier. A qualifications record may also reflect the recorder's mood at the time the entries are made and therefore be quite out of line with the true character portrait of the person being rated. To add reliability to the qualifications record it is proposed that an anecdotal record be started on a man as soon as he becomes a chief petty officer. An anecdotal record is an appraisal of personality and conduct and involves the frequent recording of aspects of behavior which seem significant to the observer, recorded at the time the behavior occurs. Such a record, if kept current, comprise frequent comments and thus is excellent for use in preparing a qualifications record. "Anecdotal records are comparable to test papers in that they constitute primary source data and not secondary sources as do most other kinds of personnel records." 9

In order to base the selection of students on all pertinent information obtainable, and to establish a plane of reference to which all applicants can be compared, there needs to be more than the commanding officers' recommendations. The selection procedure should include both aptitude and achievement tests.

"Aptitude is a condition, a quality, or a set of qualities in an individual which is indicative of his potentialities for the future. It is a complex of innate tendencies and the influence of training."¹⁰ Here the interest centers in measuring the applicant's aptitude for serving in commissioned officer rank as well as his general scholastic aptitude. The Navy College Aptitude Test,¹¹ prepared and administered by the Naval Examining Section of the College Entrance Examination Board, is designed for this very purpose and could be used in this program.

Records on achievement tests are excellent for the prediction of the future educational success of individuals in the subjects covered by the tests.¹² For this reason an achievement test is desirable. Fortunately there is already available in the service a battery satisfactory for this purpose. There is another reason for supplementing the aptitude test, for which no dependence is required, with an achievement test. To estimate the latent ability of the applicant, who is competing for se-

¹⁰ *Journal of Educational Psychology*, 1914, 5, 1-10.

¹¹ *Naval Examining Section, College Entrance Examination Board*.

¹² *Journal of Educational Psychology*, 1914, 5, 1-10.

lection, will be motivated to spend some time in improving his general educational level after becoming a chief petty officer, the thing that was left undone by Part I of our plan.¹³

It is proposed that the selection of students be done by a board of officers convened at the Bureau of Naval Personnel, the board to base its decisions on the test scores, the commanding officers' recommendations (which include qualifications records) and the applicants age.

The age factor is introduced only from a consideration of the probable number of servicable years remaining in the individual. A man of 27 is apt to be more able to meet the physical demands of active service if recalled to duty fifteen or twenty years hence than is a man of 35. Therefore, of two otherwise equally qualified individuals, the younger should be selected ahead of the older. It is estimated that the average age of the applicants will be about 30 years and there should be little concern as to their learning abilities being limited by age. It has been established that the peak in learning occurs at about the twenty-third year in the life of a person; and that for the next fifteen or twenty years there is but slight decrease in learning capacity.

The total (learning) curve thus rises to a peak in the early 20's, falls slowly and by amounts which are practically inconsequential from then until the early 40's, and more rapidly from the early 40's to the middle 50's, at which point it

has reached a level roughly equivalent to the score of 12-year olds."¹⁴

A final word on selection is to advocate very high standards and to warn against allowing the standards to be lowered to meet planned quotas of students. If there is an insufficient number of thoroughly qualified applicants to fill the program then the size of the program should be cut.

COURSE OF STUDY

Having selected the students for this program what is to be the nature of the studies they will pursue?

Referring again to the program's principal objective, to develop the liberal education of petty officers in order to prepare them better for the duties of a commissioned officer, it seems logical that they should be enrolled in liberal arts courses. Their college work should also include such courses in naval science as would develop an insight into command relations. Even an introduction into the science of navigation and naval tactics may be considered appropriate for some of the more advanced students but these more specialized fields should not be permitted to infringe upon the time required for a survey of the field of social studies. The program is not intended to improve the technical knowledge of these chief petty officers in their own field of specialization and for this reason technical subjects would be banned.

1. *Proceedings of the Naval Academy*, 1914, p. 218

It is proposed that a core curriculum be established as mandatory and that a list of related subjects be prepared from which each student could select subjects according to his individual interest and ability. Some control would necessarily be established to prevent a chief electrician's mate, for example, from enrolling in a course in electrical engineering.

The following subjects are suggested as being important for consideration for inclusion in the core curriculum:

General Psychology
 Psychology and Personnel-Advanced
 Principles of Economics
 Philosophy of Education
 Principles of Class Room Instruction-Advanced
 English Composition and Reading
 History of Modern Russia-Advanced
 Naval Customs and Traditions, and
 Naval Leadership

Among those suggested as related subjects are:

Public Administration-Advanced
 Survey of Legislation Pertaining to Naval Personnel
 and including the Bureau of Naval Personnel Manual
 Military Law
 Navy Regulations
 Navigation
 Naval Tactics
 Introduction to Literature-Elementary
 College Algebra-Elementary
 American National Government-Elementary
 Psychology of Personality
 Occupational Information
 Elementary and Intermediate Russian
 Principles of Sociology-Elementary
 Human Nature and Social Adjustment, ~~and~~
 Geography of the Strategic Areas of the World, *and*
 Climatology

Some of the subjects recommended for the core curriculum would not be available at colleges at which there is no department of Naval Science. This is one of the reasons for recommending that the program be established at those institutions

at which a Naval ROTC Unit is already in existence.

At this point it is desirable to consider the advantages of conducting this program as proposed through civilian institutions rather than establishing a "Naval Academy for Chief Petty Officers." A project which sometimes has been advocated. There are several advantages to be gained. If an academy were established under complete naval jurisdiction there would be a very real danger that the various technical bureaus would soon encroach upon the time allotted for liberal education and have some of their technical subjects added to the curriculum. The Bureau of Ordnance, for example, would be tempted to take advantage of the opportunity to teach more fire-control or hydraulics to the chief fire-controlmen and in the course of time the broad purpose of the program of general education would be defeated. Also, the very fact that our chiefs would be moved into the civilian atmosphere of the colleges would be a broadening influence. For the first time in ten or fifteen years they would be freed from a strictly naval atmosphere and military discipline and given first hand experience as a member of a civilian society. Here, their daily routine would not be minutely planned and there would be no marching to class nor an interruption of studies by "Captain's Inspection."

Perhaps the greatest advantage, however, lies in the ease with which the program could be put into effect. Instructors, -- better instructors than the Navy could provide, are already trained and available. The physical facilities are already

there and the tremendous original outlay of money necessary for establishing an academy would not be required. The cost would still be significant but the necessary appropriations are more likely to be approved by a Congress, whose members have an eye on their "political fences" back home, if the money is to be distributed throughout the country rather than spent in one locality.

A naval academy would have an appeal to the students for it would promote esprit de corps and perhaps add to the prestige of its student body more than would be the case if they are divided among several civilian colleges. However, the colleges would also have a strong appeal for the students. Most of them would have an opportunity to serve a tour of duty, for the first time in their careers, in their own home state, an opportunity to live for a while near their old home town and near their parents and former friends.

In closing this discussion of the college program, it is desirable to suggest that there may be a need for motivating the students to do their best work. This could be accomplished in two ways: (1) A minimum standard could be set and if any student fell below that standard for two consecutive terms he would be returned to sea duty; (2) The satisfactory completion of the course could be made a requirement for promotion into the next grade. This requirement could be worked very easily as long as the output of the program in each rating exceeded the number of vacancies being promoted from that rating.

SUMMARY

A survey was made of the sources from which the Navy draws its junior commissioned officer personnel and it was found that in time of rapid naval expansion it is necessary that a number of these officers be promoted from the enlisted ratings. The number of enlisted men thus promoted just prior to and during World War II was less than might have been expected. The reason that more were not selected for commissioned rank was attributed to lack of qualifications. Of those who were promoted, more than a reasonable percentage were found to be inadequate for performing their more exacting duties in a highly satisfactory manner. It is believed that the lack of qualifications of the one group and the inadequacies of the other have their foundations in a lack of a broad and liberal educational background. This was shown to have resulted from an over emphasis on purely technical education and training during the naval careers of these men, many of whom had left school prior to high school graduation. A solution to this problem was presented in two parts: Part I was designated to develop the liberal educational growth of all naval petty officers; Part II had as its objective the selection of the best qualified chief petty officers and the furtherance of their liberal education at accredited civilian colleges and universities. These improvements in the educational program of the Navy are necessary if an adequate supply of experienced men is to be available for appointment to commissioned rank in event of another national emergency requiring rapid naval expansion.

APPENDICES

APPENDIX - I

Precedence of Officer Ranks and Enlisted Ratings of the United States Navy.

Precedence of Rank

Fleet Admiral
Admiral
Vice Admiral
Rear Admiral
Commodore (usually vacated during time of peace)
Captain
Commander
Lieutenant Commander
Lieutenant
Lieutenant (junior grade)
Ensign
Commissioned Warrant
Midshipmen
Warrant

Precedence of Rating

Chief petty officer
Petty officer, first-class
Petty officer, second-class
Petty officer, third-class
Seaman, first-class
Seaman, second-class
Apprentice seaman

APPENDIX - II

Naval Reserve Officer's Training Corps Unit¹

Units established in 1926:

University of California, Berkeley, California
Georgia School of Technology, Atlanta, Georgia
Harvard University, Cambridge, Massachusetts
Northwestern University, Evanston, Illinois
University of Washington, Seattle, Washington
Yale University, New Haven, Connecticut

Units established in 1938:

University of California at Los Angeles, Los Angeles, Calif.
Tulane University of Louisiana, New Orleans, Louisiana

Units established in 1939:

University of Minnesota, Minneapolis, Minnesota

Units established in 1940:

Brown University, Providence, Rhode Island
Marquette University, Milwaukee, Wisconsin
University of Michigan, Ann Arbor, Michigan
University of North Carolina, Chapel Hill, North Carolina
University of Oklahoma, Norman, Oklahoma
University of Pennsylvania, Philadelphia, Pennsylvania
University of South Carolina, Columbia, South Carolina
University of Southern California, Los Angeles, California
University of Texas, Austin, Texas
University of Virginia, Charlottesville, Virginia

Units established in 1941:

University of Colorado, Boulder, Colorado
Wake University, Durham, North Carolina
College of Holy Cross, Worcester, Massachusetts
University of New Mexico, Albuquerque, New Mexico
University of Notre Dame, South Bend, Indiana
Rensselaer Polytechnic Institute, Troy, New York
Rice Institute, Houston, Texas
Woods College, Welford, Massachusetts

¹ Nelson, A.A., The Naval Officer's File, c rsw- ill oo o.
Dec., 1940; p. 100

APPENDIX II (Con't.)

In 1945 there were 25 additional units established at the following institutions² to bring the number now in operation to 52.

Alabama Polytechnic Institute, Auburn, Alabama
 Columbia University, New York, N.Y.
 Cornell University, Ithaca, N.Y.
 Dartmouth College, Hanover, New Hampshire
 Illinois Institute of Technology, Chicago, Ill.
 Iowa State College, Ames, Iowa
 Miami University, Oxford, Ohio
 Ohio State University, Columbus, Ohio
 Oregon State College, Corvallis, Oregon
 Pennsylvania State College, State College, Pennsylvania
 Princeton University, Princeton, New Jersey
 Purdue University, West Lafayette, Ind.
 Stanford University, Stanford University, Calif.
 University of Idaho, Moscow, Idaho
 University of Illinois, Urbana, Ill.
 University of Kansas, Lawrence, Kansas
 University of Louisville, Louisville, Ky.
 University of Mississippi, University, Miss.
 University of Missouri, Columbia, Mo.
 University of Nebraska, Lincoln, Nebraska
 University of Rochester, Rochester, N.Y.
 University of Utah, Salt Lake City, Utah
 University of Wisconsin, Madison, Wisconsin
 Vanderbilt University, Nashville, Tenn.
 Villanova College, Villanova, Pennsylvania

APPENDIX - III

The following table was constructed by the writer from a study made of school grade completed by 1781 young men who enlisted in the Navy from sections of Ohio and Kentucky during the twelve month period ending 1 June, 1947. Of the 1781 enlistees 827 were from Ohio and 954 were from Kentucky. The data was compiled from information supplied by the Naval Recruiting Headquarters at Columbus, Ohio and Louisville, Ky.

Age	No.	School Grade Completed										
		6	7	8	9	10	11	12	13	14	15	16
17	677	19	47	149	134	154	100	74	0	0	0	0
18	228	0	10	40	30	23	33	77	5	0	0	0
19	89	0	4	21	21	13	8	19	3	0	0	0
20	158	0	4	31	18	25	18	57	4	1	0	0
21	220	2	13	44	30	34	32	54	9	2	0	0
22	152	1	10	16	14	17	21	60	12	0	1	0
23	106	3	5	14	17	10	11	41	5	0	0	0
24	91	3	9	12	3	10	4	42	2	3	1	2
25	60	0	0	11	3	5	5	30	2	1	1	2
Total	1781	28	102	339	270	296	237	454	42	7	3	4
%	100	1.6	5.7	18.9	15.2	16.6	13.3	25.5	2.4	0.4	0.2	0.2

Total Completing * Grade or Better												
No.	6	7	8	9	10	11	12	13	14	15	16	
1781	1753	1651	1313	1043	747	510	56	14	7	4		
%	100	98.5	92.7	73.7	58.6	41.9	28.6	3.1	0.8	0.4	0.2	

* 6th, 7th, 8th, etc.

Median grade completed, 10.5
Median age 18

APPENDIX - IV

Naval Schools Curricula

The highly specialized nature of courses offered at Naval Schools is indicated by the following.

"Refrigeration and air-condition are now being offered at NTS, Norfolk and NTC, San Diego.

Standard curricula have been prepared for the new schools by Supers.

General plan of the curricula1. Refrigeration:

- (a) Fundamentals of refrigeration (1st week)
- (b) Compressor disassembly, repair, and reassembly (2nd week)
- (c) Tear-down and study of accessory equipment (3rd week)
- (d) Trouble shooting and operation (4th week)

2. Air-Conditioning:

- (a) Introduction to air-conditioning (1st week)
- (b) Operation and trouble shooting (2nd week)"1

"Practical shop work combined with a small amount of training films and lectures is the method used to teach enlisted trainees at the Optical School, Boston Navy Yard.

Trainees, selected from Ensigns' Rates' schools, ships, and stations throughout the Navy, are enrolled for 16 weeks during which time they are taught the theory of optics; repair, reassembly, and collimation of navigation instruments: sextants, altimeters, octants, azimuth circles, bearing

1. Bureau of Naval Personnel Training Bulletin, Mayers 14937, 15 Dec. 1945, p. 16

APPENDIX IV (Con't.)

circles, binoculars, azimuth telescopes, telescopic alidades and ships' compasses; also, the disassembly, repair, reassembly and collimation of gun sight telescopes; theory of rangefinders, spotting glasses, lead computing sights, submarine periscopes, coating of lenses and silvering of mirrors.

Films and lectures never take up more than three or four hours of the trainees' day. Practical work in the navy yard's optical shop and aboard ship is emphasized."²

"At the Elementary Electricity & Radio Material schools trainees attend classes and laboratories eight to ten hours a day for three months.

In the mathematics course students learn vector algebra, logarithms, simple algebraic equations, and trigonometry. The electricity course begins with Kirchoff's laws and continues into the sine wave generation, and AC power and circuits. A practical course on rotating machinery teaches the do's and don'ts of this type of equipment. Radio theory is introduced by a detailed study of the vacuum tube, followed by lectures on audio amplifiers, tuned circuits, detectors, oscillators, rectifiers and power supplies, and finally the complete superheterodyne receiver."³

² ibid., page 10

³ ibid. papers 14925, 15 &c. 1946, p.11

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Class "P" School

"The curriculum for use by the Class "P" Naval School at N.F.C., Bainbridge, Md., gives an outline of the indoctrination course to be given trainees in the basic work of storekeepers and yeomen.

The course prescribed is of 12 weeks' duration, and includes basic training in subjects related to both yeoman and storekeeper duties. Some of these are mathematics, telephone talking, lookout recognition, Navy Organization, and the responsibilities of a petty officer. Actual clerical work consists of instruction on the typewriter and other office machines, the Navy filing system, use of forms, preparation of reports, and general office routine.

Class "A" School

The curriculum for fire controlmen, to be used in Class "A" schools, is designed to give the student a thorough background in the skills, techniques and theory of fire control, which will serve as a basis for later work in operation and maintenance aboard ship. Throughout the course, emphasis is given to those fundamental skills and areas of learning upon which are based the qualifications of all fire controlmen of all classes.

A suggested number of hours to be devoted to each subject is included in the outline of instruction, and the time as al-

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lotted permits opportunity for supervised study periods and examinations. The greatest amount of time, 150 hours, is assigned for instruction in basic electricity. Electronics is allotted 74 hours and the phases covered include fundamentals of electronic circuits in the Mark 6 stable element, use of the cathode ray oscillograph, practice in sketching electronic circuit schematics, and instruction in the operation and maintenance of the sound-powered telephone unit.

Among the other topics outlined in the course of instruction are basic mathematics, fire-control theory and mathematics, ordnance information, the Mark 37 system and light antiaircraft directors. Following each unit of instruction are references to publications containing material pertinent to the subject.

The final pages of the curriculum contain a complete list of films, with the running time required, to complement the instruction. Titles of a group of reference books are also given. A list of the major equipment required for adequate presentation of the subject matter is the final item in this curriculum."⁴

4 U.S. Naval Training Bulletin, Navpers 14945, 15 Aug. 1946
p. 10

APPENDIX IV (Con't.)

Class "C" SchoolU.S. Naval School (Printer,) Class "C"

"An eight week Printer M Course at the school provides instruction in the essentials of photo-lithography and offset printing. Non-rated men.....having had previous experience in printing or lithography are eligible for the course, as well as rated printers desiring further instruction.

Upon completion of the basic instruction, trainees enter the Printer I course for training in the use of commercial type lithographic offset presses, or take the Specialist (P) course on the operation of photographic equipment used in offset printing. Both courses are 8 weeks in length."5

APPENDIX - V

List of subject fields covered by Educational Manuals and Description of typical texts.¹I. Subject Fields CoveredA. Self-Teaching Texts:

Agriculture	Business
English	Mathematics
History and Government	Mechanics
Reading	Science and Radio

B. Reprints of Standard Texts:

Aeronautics	Agriculture
Business	Economics and Sociology
Education, Psychology and Philosophy	Mathematics
History and Government	Music and Art
Science and Engineering	Trades

II. Description of Typical TextsEnglish Grammar - Spangler: Macmillan Co., 1943Level - High SchoolPrerequisites - Ability to read and understand text essential

Purpose and Content of Course - May be useful for meeting requirements for Freshman English in high school: useful for men interested in improving their spoken as well as written English; basic course in grammar with emphasis on correct functional usage. Covers topics such as: Agreement of Verb with Subject, Parts of Speech, such stumbling blocks as "sit and set," "lie and lay," and many others.

¹ Taken from Descriptions of Education Manuals, Navpers 16410 Educational Services Section, Bureau of Naval Personnel, Washington, D.C.

APPENDIX V (Con't.)

II. Description of Typical Texts (Con't.)

The Human Organism and the World of Life - Young, Stebbins, Hylander; Harper and Brothers, 1938

Level - College

Prerequisites - High school graduation or the equivalent training desirable.

Purpose and Content of Course - May be useful for meeting science requirements for college graduation and as pre-professional training for those planning further study in the field of medical science. Survey of biological principals as they relate to man, thorough study of the human body and life processes; covers topics such as: Substance and Structure of the Human Body, Principles of Heredity, The Nervous System, Behavior and Mental Activity, Mental Health

Psychology and Life - Ruch; Scott, Foresman & Co., 1944

Level - College

Prerequisites - Ability to read and comprehend text essential; high school graduation desirable.

Purpose and Content of Course - May be useful for meeting requirements for college graduation and for those intending to do further study in psychology. Survey of basic concepts and theories of psychology; covers subjects such as: Factors in development, Motivations, Emotions, Learning, Thinking, Personality and Individual Differences, Intelligence, Vocational and Employment Psychology, Psychology and Social Problems, The Form and Functioning of the Nervous System.

APPENDIX V (Con't.)

II. Description of Typical Texts (Con't.)

Foremanship and Supervision - Cushman; John Wiley & Sons,
1938

Level - High School

Prerequisites - Ability to read and understand text and sufficient experience in industry or business to be eligible for supervisory job essential.

Purpose and Content of Course - May be useful in the training of foremen, supervisors, and other minor executives in various aspects of conference leadership. A study of the factors involved in effective supervision. Includes topics such as: Some Fundamental Principles of Good Supervision, Elements Involved in a Complete Training Program, The Job of a Conference Leader.

APPENDIX - VI

Explanation of General Educational Development Tests

"In service educational experiences are of two major types. One consists of formal learning experience involved in (a) the service training programs; (b) the correspondence and self-teaching courses and various types of group instruction offered to servicemen in their off-duty time by USAFI; (c) class instruction in college, junior college and secondary school subjects, offered on a voluntary basis. The other type consists of informal learning experiences, including (a) direct observation and first hand experience of servicemen in countries and places visited; (b) educational experiences incidental to military service as such, that is, experiences gained while "on the job" after completion of formal training; (c) self-directed study, self-education through reading, educational movies and lectures, and organized discussions.

"For many individuals the informal experiences will be significant. For all individuals the effect of the two types of in-service experience (formal and informal) will be intermingled. Furthermore the general educational values derived from the same formal experiences will vary with individuals, due to differences in general intelligence, previous educational status, interest, incentive, and educational objectives. Accordingly, there is no possibility of determining the complete educational status, or the appropriate educational placement of the ex-service student through consideration alone of the

APPENDIX VI (Con't.)

'subject matter content' and the duration of his formal in-service experiences. A sound estimate of the student's total educational growth can be secured only on the basis of measures of competence carefully selected in consideration of the sum total of his educational experiences and with reference to his own educational objectives.

"To enable schools and colleges to proceed along sound lines in the evaluation of educational experience in the armed forces, the USAFI has constructed educational achievement examinations and tests of general educational development."¹

"The Tests of GED are designed to measure the extent to which all of the educational experience of the veteran has contributed to his ability to 'carry on' in a program of general education, or to his educational development of the type which might otherwise have resulted from attendance in a regular academic high school or in the first 2 years of a liberal arts college.

"Separate batteries of the Tests of GED have been prepared for use at the high school and college levels. The high school level battery consists of five comprehensive examinations, one for each of the fields of the social studies, the natural sciences, literature, mathematics, and English. These tests

1. Tuttle, U.P., Director American Council on Education, A Guide to The Evaluation of Educational Experiences in the Armed Services, Complete Edition, John L. Swift Co. Inc., 1943; pp. IX & X

APPENDIX VI (Con't.)

are intended for use primarily with servicemen who either have never attended high school or had completed only a part of their high school course before entering the service. With such individuals these tests may be used to determine whether--through formal or informal educational experiences both in and out of the service--they have acquired the equivalent of a general high school education, or are as able to carry on in a program of general education at the college level as are students who have formally completed high school.

"The college level battery consists of four comprehensive examinations in the social studies, the natural sciences, literature and English. The tests are intended primarily for use with servicemen who had completed or almost completed their high school course before entering the service or who had just begun their college education. With such individuals these tests may be used to determine whether all of their formal and informal educational experiences have given them the equivalent of a broad cultural basis which they might otherwise have secured through comprehensive introductory or survey courses in the social studies, natural sciences, literature and English at the freshman or sophomore level."²

"In general, approximately 80 to 85% of the students who are selected from public high schools throughout the country must meet one of the following alternative requirements.

APPENDIX VI (Con't.)

1. Make a standard score of 35, or above, each of the five tests in the battery.
2. Make an average standard score of 45, or above, on the five tests in the battery."³

APPENDIX VII

NAVY ENROLLMENT IN USAFI PROGRAMMarch--June 1947

Average Navy Enrollments per month for the months of March-June 1947

Correspondence Courses	1017
Education Manuals	300
University Extension	<u>102</u>
Total	1419

Average Navy Completions per month for months of March-June 1947

Correspondence Courses	188
Education Manuals	52
University Extension	<u>147</u>
Total	387

Total Navy Active Enrollees as of 30 June 1947

Correspondence Courses	23,712
Education Manuals	4,171
University Extension	<u>16,120</u>
Total	44,003

Average Navy lessons corrected per month for months of March-June 1947

3952

Average Navy Rate of Completion for months of April-June 1947

Correspondence Courses and Education Manuals	11.0%
Correspondence Courses, Education Manuals, and University Extension Courses	14.8%

(Reported by Major John L. Parsons, U.S.A., Staff, USAFI.)
 Jul 1947

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